SHARP SERVICE MANUAL

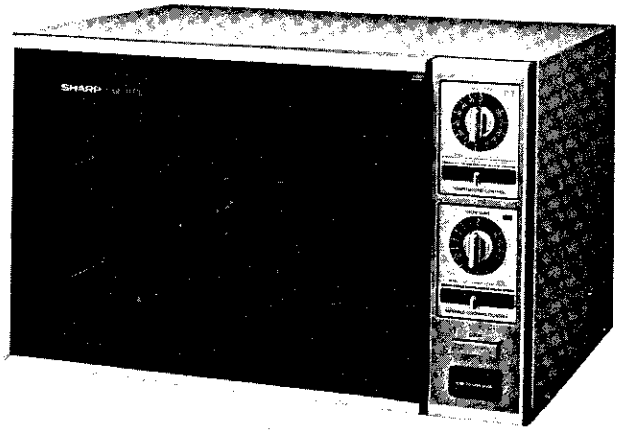
R-8310E

KASM981053R

SHARP

CONVECTION MICROWAVE OVEN

R-8310E



In the interests of user-safety the set should be restored to its original condition and only parts identical to those specified used.

SHARP CORPORATION

SERVICE MANUAL

SHARP

R-8310E

FOREWORD

This service manual is prepared to provide Sharp service personnel with complete service information on Sharp Convection Microwave Oven.
Basic, general information for Sharp Microwave Ovens is given in the GENERAL service manual.

Therefore, to permit them to give satisfactory customer service, it is recommended that service personnel first study the entire text of GENERAL manual, and then carefully study this book.

CAUTION

MICROWAVE RADIATION

Personnel should not be exposed to the microwave energy which may radiate from the magnetron or other microwave generating devices if it is improperly used or connected.
All input and output microwave connections, waveguides, flanges, and gaskets must be secured.
Never operate the device without a microwave energy absorbing load attached.
Never look into an open waveguide or antenna while the device is energized.

SHARP CORPORATION
OSAKA, JAPAN

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CHAPTER I

PRODUCT DESCRIPTION

EXPLANATION OF MICROWAVE COOKING AND CONVECTION COOKING

The Sharp Convection-Microwave oven uses microwave energy and the sheath heater to produce heat in the food to be cooked.
Unlike conventional ovens, microwave energy will cook foods without applying external heat.

Microwaves which are short electromagnetic waves of RF (radio frequency) energy, pass through materials such as glass, paper, china, and most plastics. Materials such as metal and aluminum foil tend to reflect microwaves and may be used only as recommended in the cooking instructions.

Materials with a high moisture content, like most foods, will absorb microwave energy. As the microwave energy, at a frequency of 2,450 Megahertz enters the food, the molecules align themselves with the energy. However, cooking by microwave energy only, produces no browning or searing (unless cooking a roast of sufficient thickness). This microwave oven is, therefore, equipped with a sheath heater to provide browning of the food.
The combination of the heater plus high-speed circulation of air by a circulating fan around the food provides fast cooking and browning of foods conventionally with or without the addition of microwave energy.

SPECIFICATIONS

ITEMS	DESCRIPTIONS
Power Requirements	220/240V 50Hz Single phase, 3 wire earthed
Microwave Output Power	650W (2 liter water load)
Convection Output Power	1.5 kW
Case Dimensions Width Height Depth	 627mm 408mm including feet 505mm with the cord bracket
Cooking Cavity Dimensions Width Height Depth Turntable diameter	 395mm 256mm 400mm 370mm
Control Complement	Cook Switch 60 min. Dual Speed Timer (Microwave Timer) 120 min. Single Speed Timer (Convection Timer) Variable Cooking Mode Selector Repetition Rate: Full Power . . . . . Full power throughout the cooking time Roast . . . . . 22 sec. ON, 8 sec. OFF, approx. 70% of full power Simmer . . . . . 16 sec. ON, 14 sec. OFF, approx. 50% of full power Defrost . . . . . 11 sec. ON, 19 sec. OFF, approx. 30% of full power Warm . . . . . 5 sec. ON, 25 sec. OFF, approx, 10% of full power Convection Temperature Control WARM, 90°C to 250°C

CHAPTER II

OPERATION

DESCRIPTION OF OPERATING SEQUENCE
(Australia Model)

The following is a complete description of component functions during the three stages of oven operation.

OFF CONDITION

With both timer (microwave and convection) dial at "0" position and the door closed, no components in the oven will operate, Figure 1. But the oven lamps and fan motor will turn on with the door opened.

Closing the door activates both door latch switches; upper latch switch and lower latch switch. (In this condition, the monitor switch contacts are opened.)

MICROWAVE COOKING CONDITION

1. FULL POWER COOKING

When time is selected on the microwave timer, the variable cooking mode selector is set to FULL POWER position and cook button is depressed, the following operations occur: (Figure 2)

1-1. The contacts (2)–(3) of the microwave timer and the contacts of the cook switch are closed.

1-2. The turntable motor, microwave lamp, microwave timer and vari-motor are energized.

1-3. The coil of the select relay is energized.
The relay contacts ① – ② and ⑤ – ⑥ close to provide a current path to the oven lamps and fan motor.

1-4. The 240 volts A.C. is supplied to the primary winding of the power transformer and is converted to 3.15 volts A.C. output on the filament winding.

1-5. The 3.15 volts A.C. output from filament winding heats the magnetron filament.

1-6. The 2400 volts A.C. output from the high voltage winding of the power transformer is sent to a voltage doubler circuit consisting of a high voltage capacitor and a rectifier.
The 2400 volts A.C. is converted to approximately 4000 negative. D.C. voltage (peak to peak) by the voltage doubler circuit and sent to the magnetron tube assembly.

1-7. The negative 4000 volts D.C. is applied to the cathode of the magnetron tube and causes it to oscillate and produce 2450 MHz cooking frequency.

1-8. The RF energy produced by the magnetron tube is channeled through a waveguide into the cavity feedbox, and then into the cavity where the food is placed to be cooked.

1-9. Upon completion of the selected cooking time, the timer bell rings once, and the contacts (2)–(3) of the microwave timer are deactivated. The oven reverts to the OFF condition.

1-10. The monitor switch is electrically monitoring the operation of the lower latch switch and is mechanically associated with the door so that it will function in the following sequence.
(1) When the door opens from closed position, the lower latch switch first operate to open their contacts, and then the monitor switch contacts close.
(2) When the door is closed from open position, the monitor switch contacts first open, and then the contacts of the lower latch switch close.

In the case lower latch switch fail with their contacts closed when the door is opened, closing of the monitor switch contacts will form a short circuit through the fuse, and lower latch switch.

2. VARIABLE COOKING

When the cook switch is depressed and the variable cooking mode selector is set to "WARM", "DEFROST", "SIMMER" or "ROST", the following operations occur.

2-1. Above 1-1, 1-2 and 1-3 operations occur.

2-2. The vari-motor rotates at two (2) revolutions per minute. In case the mode selector is set to "WARM", the 240 volts A.C. is supplied to the power transformer intermittently through the vari-switch which is operated at approximately 5 seconds ON and 25 seconds OFF repetition rate by means of a cam roller provided on the vari-motor assembly.
The repetition rate for others are as follows:

DEFROST:	approx. 11 seconds ON
	approx. 19 seconds OFF
SIMMER:	approx. 16 seconds ON
	approx. 14 seconds OFF
ROAST:	approx. 22 seconds ON
	approx. 8 seconds OFF

2-3. The 2400 and 3.15 volts A.C. outputs are produced when the 240 volts A.C. is supplied to the power transformer.

2-4. Then above 1-5, 1-6, 1-7 and 1-8 operations occur.

Note: In addition to the above settings, the variable cooking mode selector can also be set at any position between these settings, and will provide proportionately different percentages of power.

CONVECTION COOKING

When time is selected on the convection timer, the temperature control knob is set to the desired temperature and the cook button depressed, the following operations occur: (Figure 3)

1. The contacts ②–③ and ⑤–⑥ of the convection timer and the cook switch contacts are closed.
2. The convection lamp, convection motor, convection timer and turntable motor are energized.
3. The coil of the select relay is energized.
   The relay contacts ①–② and ⑤–⑥ closed to provide a current path to the oven lamps and fan motor.
4. The 240 volts A.C. is supplied to the sheath heater through the triac of the temp. sensor control assembly.
5. When the temperature of the thermistor, which is at upper oven cavity, rises above the selected temperature, the circuit to the sheath heater is cut by the temp. sensor control assembly, but the other components remain in operation. When the temperature of the thermistor drops below the selected temperature, the 240 volts A.C. is supplied to the sheath heater.
   Until the selected cooking time is complete, the above operation is repeated.
6. The contacts of the oven thermo cut-out close when its temperature reaches the approximately 100°C.
7. Upon completion of the selected cooking time, the bell rings once, and the contacts of the convection timer are deactivated, and then convection timer motor, oven lamps, convection lamp, turntable motor, sheath heater and select relay are de-energized.
   At that time if the temperature of the oven thermo cut-out is approximately 100°C or above, the oven thermo cut-out remains ON and the fan motor continues to operate cooling the oven cavity. Or, when the temperature of the oven thermo cut-out reaches approximately 100°C or above upon completion of the selected cooking time, the same operation as described above will take place.
   When the temperature of the oven thermo cut-out reaches approximately 80°C, the contacts of the oven thermo cut-out open and the fan motor is de-energized, and the oven will revert to the OFF condition.

Note: When both microwave and convection timers are set, convection cooking takes place first. In this case, the microwave operation will begin when the convection timer returns to "0" position.

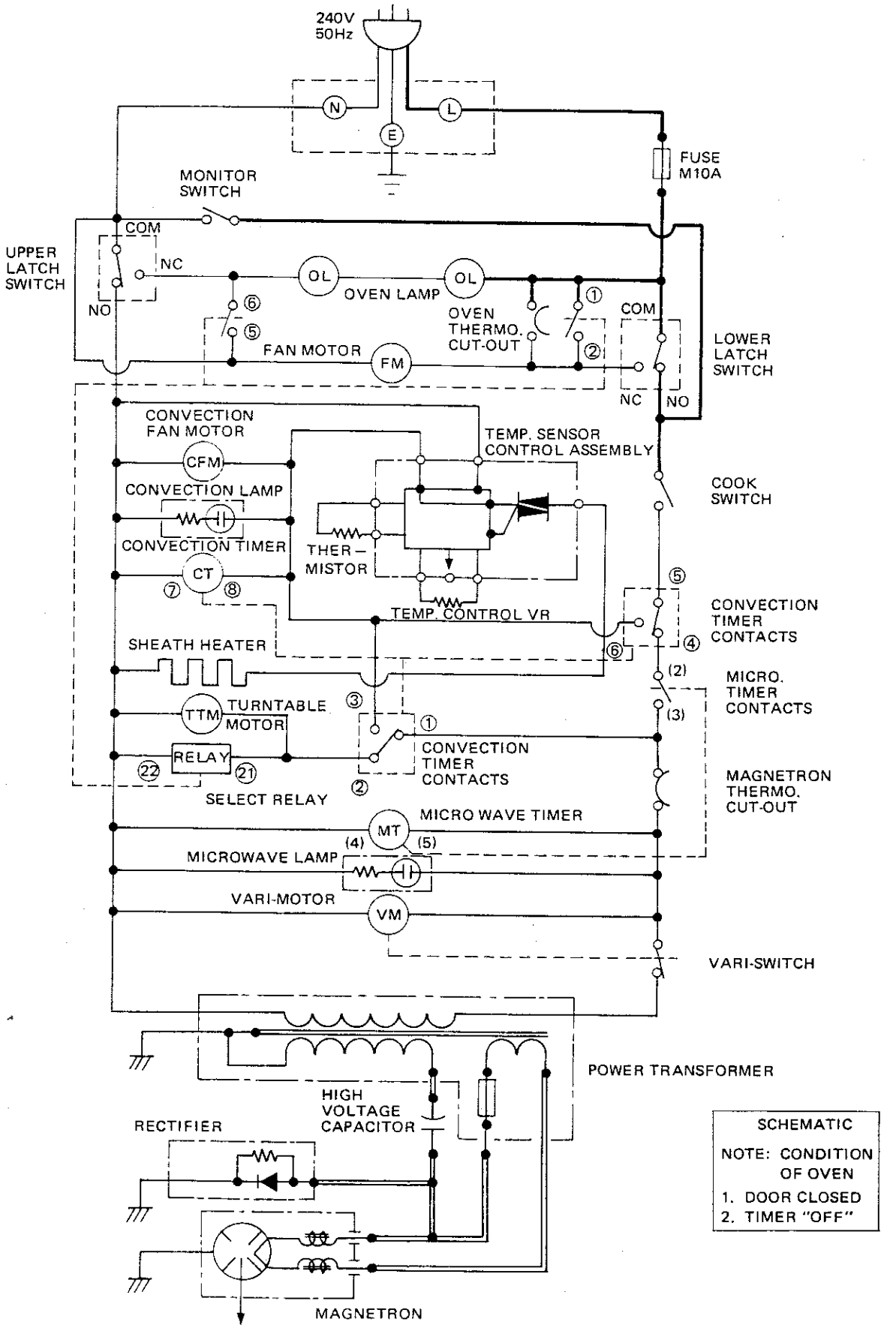


Figure 1. Oven Schematic – Off Condition (Australia Model)

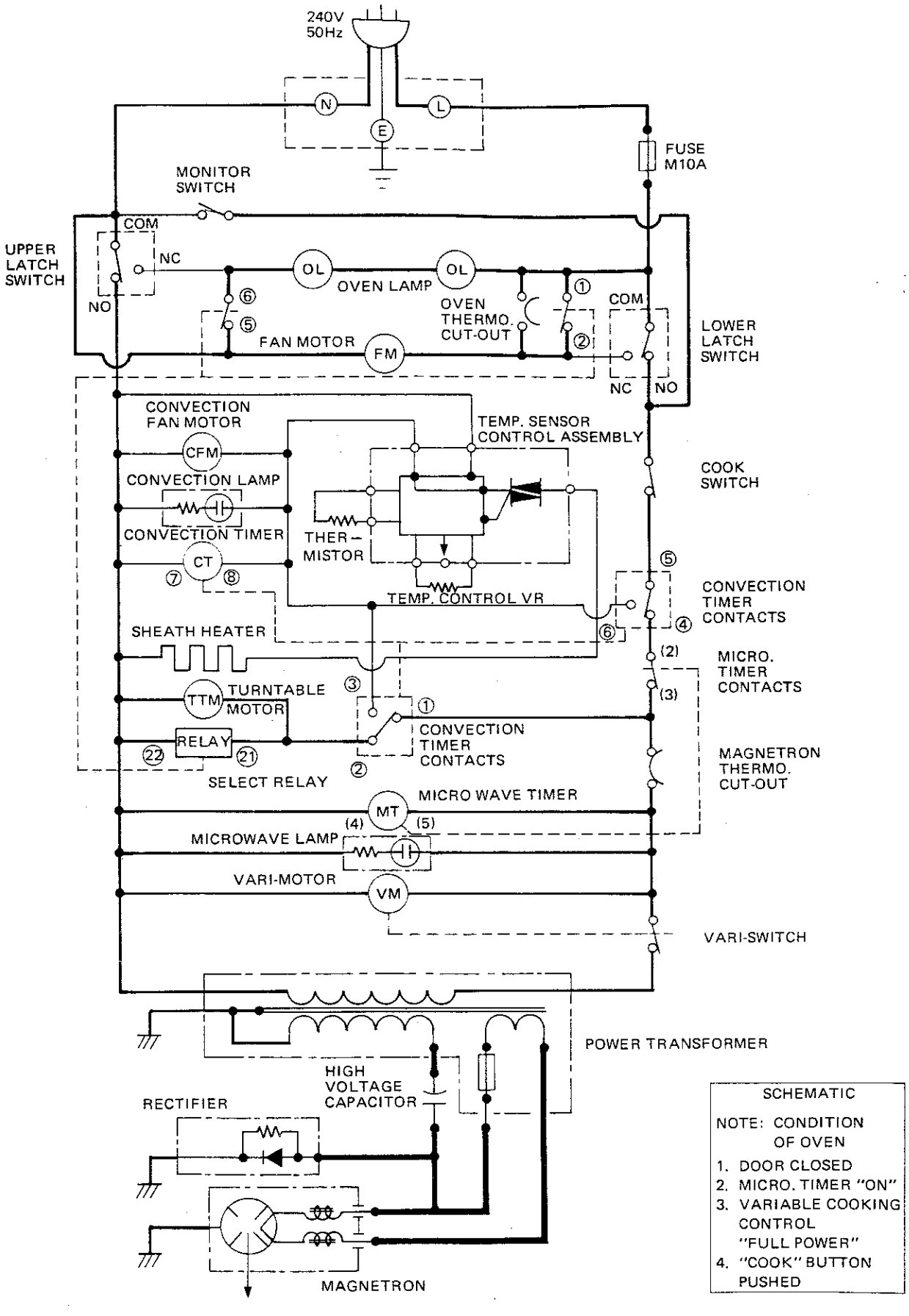


Figure 2. Oven Schematic – Microwave Cooking Condition (Full Power Cooking) (Australia Model)

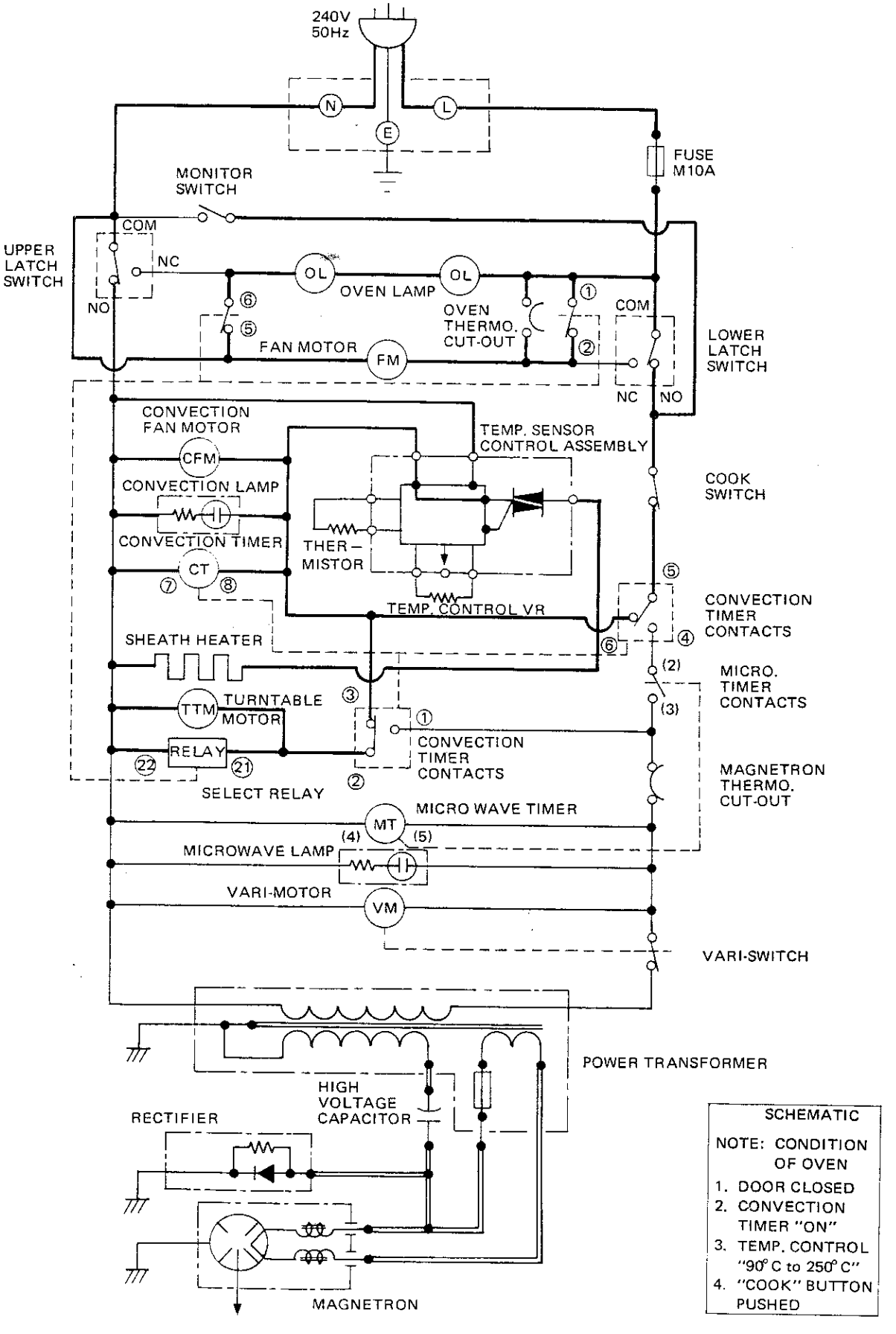


Figure 3. Oven Schematic – Convection Cooking Condition
(Australia Model)

DESCRIPTION OF OPERATING SEQUENCE
(South Africa Model)

The following is a complete description of component functions during the three stages of oven operation.

OFF CONDITION

With both timer (microwave and convection) dial at "0" position and the door closed, no components in the oven will operate, Figure 4. But the oven lamps and fan motor will turn on with the door opened.

Closing the door activates both door latch switches; upper latch switch and lower latch switch.

MICROWAVE COOKING CONDITION

1. FULL POWER COOKING

When time is selected on the microwave timer, the variable cooking mode selector is set to FULL POWER position and cook button is depressed, the following operations occur: (Figure 5)

1-1. The contacts of the microwave timer and cook switch are closed.

1-2. The turntable motor, microwave lamp, microwave timer and vari-motor are energized.

1-3. The coil of the select relay is energized.
The relay contacts ① – ② and ⑤ – ⑥ close to provide a current path to the oven lamps and fan motor.

1-4. The 220 volts A.C. is supplied to the primary winding of the power transformer and is converted to 3.4 volts A.C. output on the filament winding.

1-5. The 3.4 volts A.C. output from filament winding heats the magnetron filament.

1-6. The 2300 volts A.C. output from the high voltage winding of the power transformer is sent to a voltage doubler circuit consisting of a high voltage capacitor and a rectifier.
The 2300 volts A.C. is converted to approximately 4000 negative. D.C. voltage (peak to peak) by the voltage doubler circuit and sent to the magnetron tube assembly.

1-7. The negative 4000 volts D.C. is applied to the cathode of the magnetron tube and causes it to oscillate and produce 2450 MHz cooking frequency.

1-8. The RF energy produced by the magnetron tube is channeled through a waveguide into the cavity feedbox, and then into the cavity where the food is placed to be cooked.

1-9. Upon completion of the selected cooking time, the timer bell rings once, and the contacts of the microwave timer are deactivated. The oven reverts to the OFF condition.

2. VARIABLE COOKING

When the cook switch is depressed and the variable cooking mode selector is set to "WARM", "DEFROST", "SIMMER" or "ROST", the following operations occur.

2-1. Above 1-1, 1-2 and 1-3 operations occur.

2-2. The vari-motor rotates at two (2) revolutions per minute. In case the mode selector is set to "WARM", the 220 volts A.C. is supplied to the power transformer intermittently through the vari-switch which is operated at approximately 5 seconds ON and 25 seconds OFF repetition rate by means of a cam roller provided on the vari-motor assembly.
The repetition rate for others are as follows:

DEFROST:	approx. 11 seconds ON
	approx. 19 seconds OFF
SIMMER:	approx. 16 seconds ON
	approx. 14 seconds OFF
ROAST:	approx. 22 seconds ON
	approx. 8 seconds OFF

2-3. The 2300 and 3.4 volts A.C. outputs are produced when the 220 volts A.C. is supplied to the power transformer.

2-4. Then above 1-5, 1-6, 1-7 and 1-8 operations occur.

Note: In addition to the above settings, the variable cooking mode selector can also be set at any position between these settings, and will provide proportionately different percentages of power.

CONVECTION COOKING

When time is selected on the convection timer, the temperature control knob is set to the desired temperature and the cook button depressed, the following operations occur: (Figure 6)

1. The contacts ② – ③ and ⑤ – ⑥ of the convection timer and the cook switch contacts are closed.
2. The convection lamp, convection motor, convection timer and turntable motor are energized.
3. The coil of the select relay is energized.
The relay contacts ① – ② and ⑤ – ⑥ closed to provide a current path to the oven lamps and fan motor.
4. The 220 volts A.C. is supplied to the sheath heater through the triac of the temp. sensor control assembly.

5. When the temperature of the thermistor, which is at upper oven cavity, rises above the selected temperature, the circuit to the sheath heater is cut by the temp. sensor control assembly, but the other components remain in operation. When the temperature of the thermistor drops below the selected temperature, the 220 volts A.C. is supplied to the sheath heater.
   Until the selected cooking time is complete, the above operation is repeated.
6. The contacts of the oven thermo cut-out close when its temperature reaches the approximately 100°C.
7. Upon completion of the selected cooking time, the bell rings once, and the contacts of the convection timer are deactivated, and then convection timer motor, oven lamp, convection lamp, turntable motor, sheath heater and select relay are de-energized.
   At that time if the temperature of the oven thermo cut-out is approximately 100°C or above, the oven thermo cut-out remains ON and the fan motor continues to operate cooling the oven cavity. Or, when the temperature of the oven thermo cut-out reaches approximately 100°C or above upon completion of the selected cooking time, the same operation as descrebed above will take place.
   When the temperature of the oven thermo cut-out reaches approximately 80°C, the contacts of the oven thermo cut-out open and the fan motor is de-energized, and the oven will revert to the OFF condition.

Note: When both microwave and convection timers are set, convection cooking takes place first. In this case, the microwave operation will begin when the convection timer returns to "0" position.

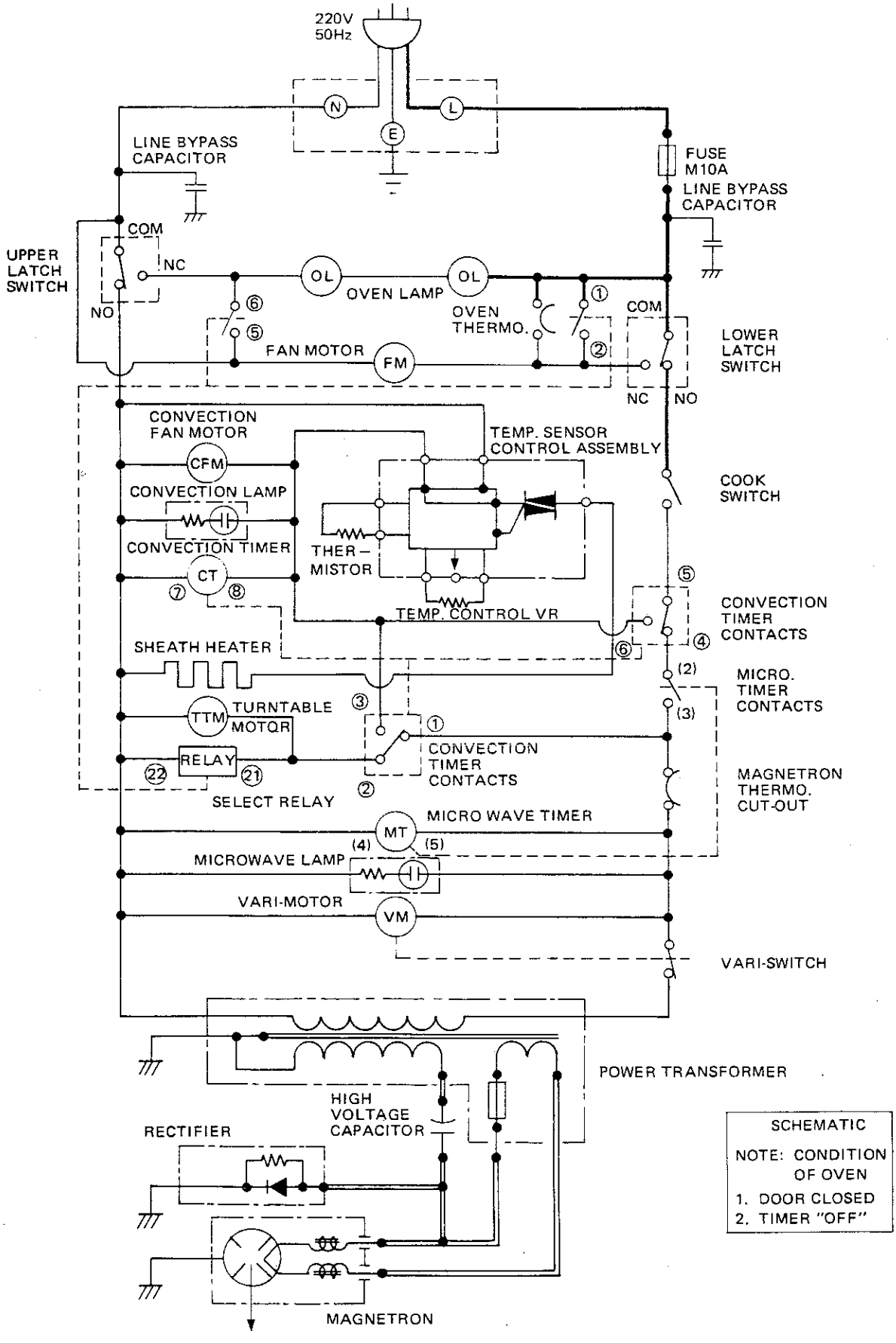


Figure 4. Oven Schematic – Off Condition (South Africa Model)

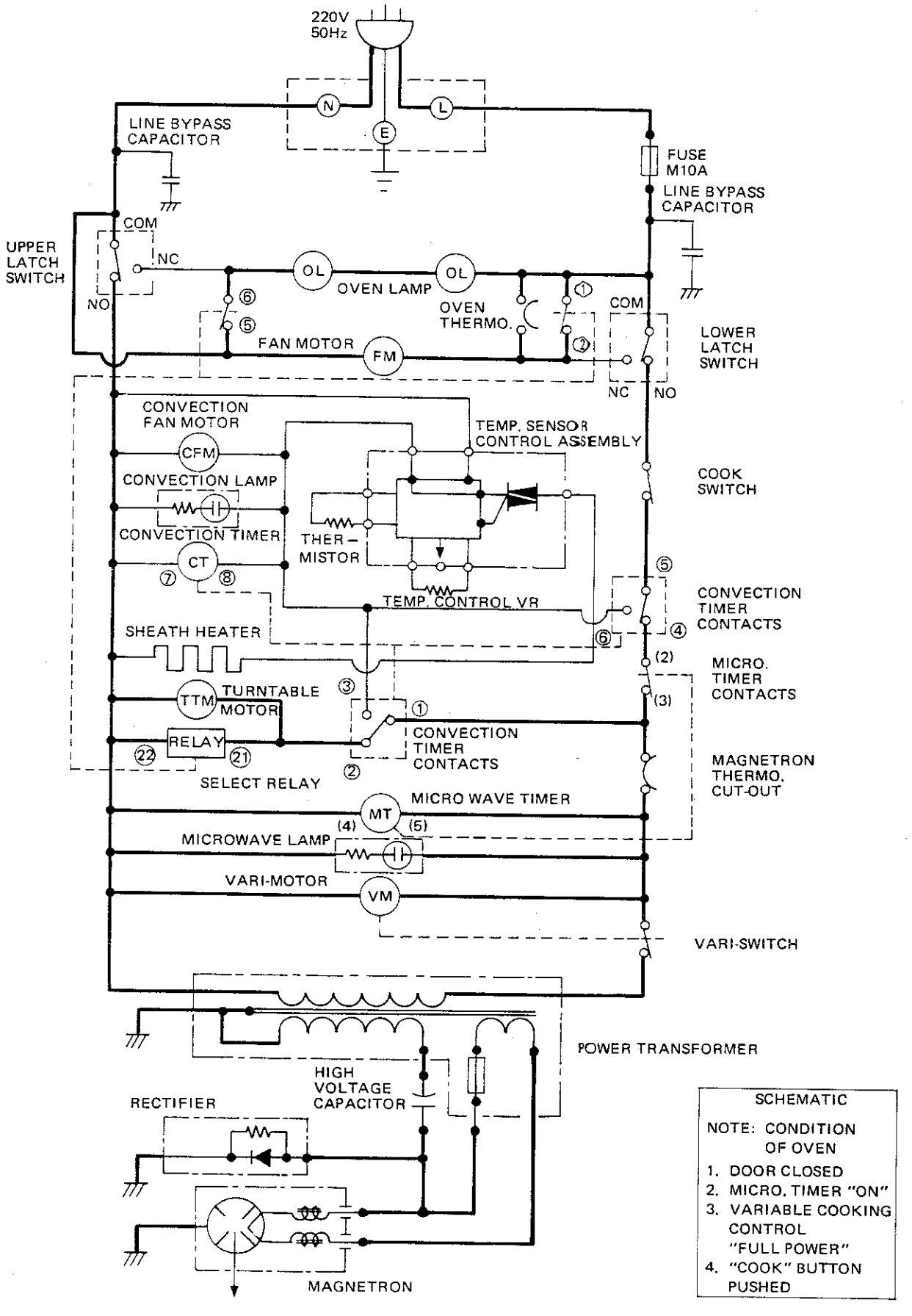


Figure 5. Oven Schematic – Microwave Cooking Condition (Full Power Cooking)
(South Africa Model)

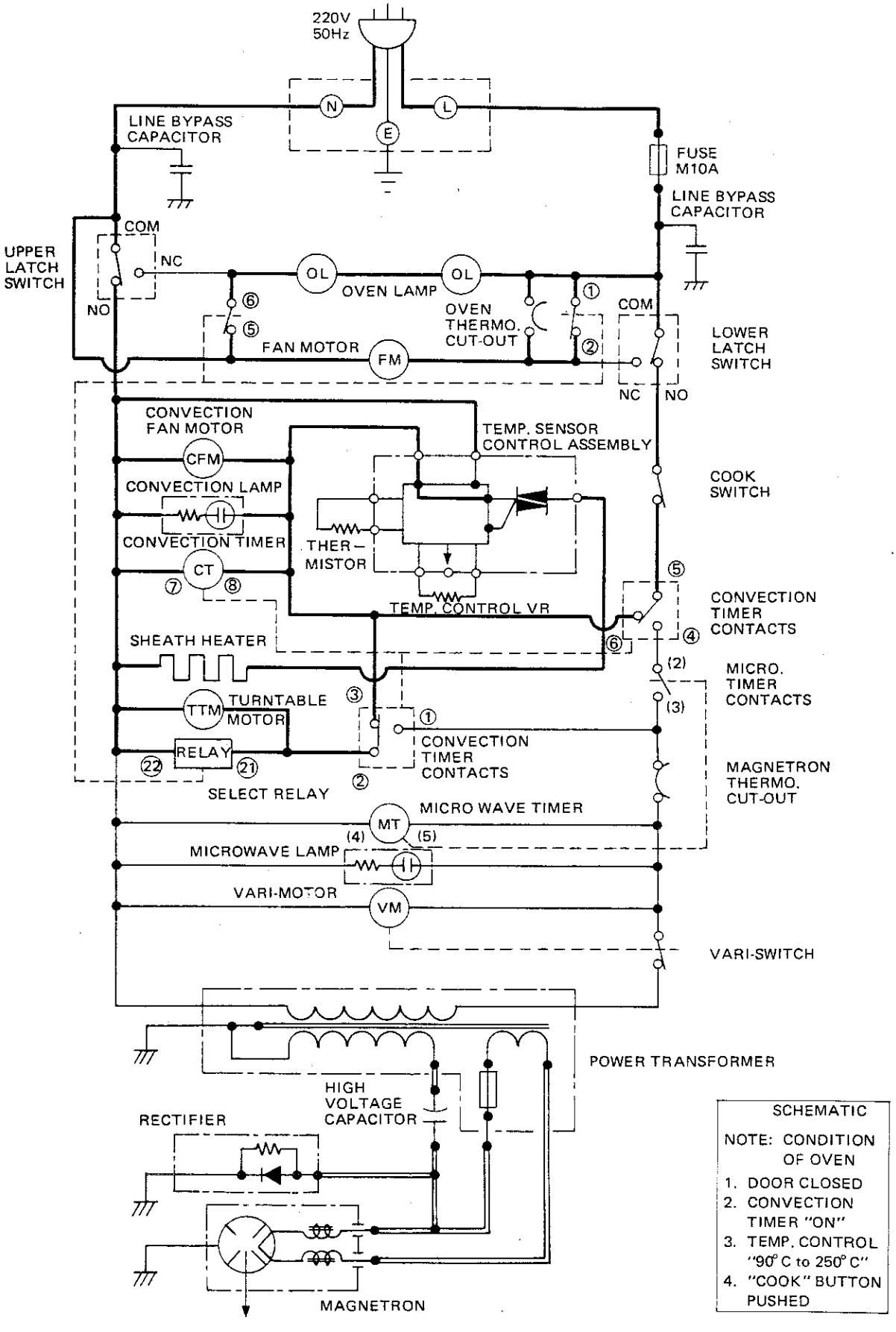


Figure 6. Oven Schematic – Convection Cooking Condition
(South Africa Model)

DESCRIPTION AND FUNCTION OF COMPONENTS

OVEN LAMP

The oven cavity lamp illuminates the interior of the oven so that the food being cooked can be examined visually through the door window without having to open the door.

FAN MOTOR

The fan motor drives a blade which draws cooling air through the oven base. This cooling air is directed through the air vanes surrounding the magnetron and cools the magnetron assembly. Most of the air is then exhausted directly through the back vents. However, a portion of this air is channeled through the cavity to remove steam and vapors given off from the heating foods. It is then exhausted at the top of the oven cavity into a condensation compartment. This fan motor operates during both microwave and convection cooking.

TURNTABLE MOTOR

The turntable motor rotates the turntable located on the bottom of oven cavity, so that it works to cook the foods on the turntable evenly, during both microwave and convection cooking.

MICROWAVE TIMER

Timer switch contacts.

The timer switch contacts are mechanically opened or closed by turning the dial knob located on the timer motor shaft. These contacts control the current path to the microwave timer, microwave lamp, turntable motor, select relay, vari-motor and power transformer.

Timer bell:

The bell striker is mechanically driven by the timer motor and rings once at the end of the cook cycle.

Timer motor:

Timer is dual speed type: cook time from 0 to 60 minutes may be selected. Up to 10 minutes the dial is divided in 15 second intervals. From 10 minutes to 60 minutes the dial is marked off in 5 minute intervals. The timer motor is energized through the cook switch and thermo cut-out contacts. When the timer reaches the 0 point on the scale the timer switch opens the circuit to fan motor, oven lamps, turntable motor, timer motor, microwave lamp, select relay and vari-motor, and the cook cycle stops.

CONVECTION TIMER

Timer switch contacts:

The timer switch contacts are mechanically opened or closed by turning the dial knob located on the timer motor shaft. These contacts control the current path to the convection timer, convection lamp, convection motor, sheath heater, turntable motor, temp. sensor control assembly and select relay.

Timer bell:

The bell striker is mechanically driven by the timer motor and rings once at the end of the cook cycle.

Timer motor:

Cook times from 0 to 120 minutes may be selected with the timer. The dial is divided in 5 minutes intervals. The timer motor is energized through the convection timer contacs ⑤ - ⑥ . When the timer reaches the 0 point on the scale, the timer switch opens the circuit to timer motor, convection motor, convection lamp, temperature sensor control assembly (sheath heater), select relay, and oven lamps and the cook cycle stops.

But the fan motor remains in operation until the contacts of the oven thermo cut-out open.

Timer shaft:

Cams are inserted into the timer shaft. When the timer shaft is wound up, these cams operate to close a damper so that no hot air will be allowed to leak out of the oven cavity. When the timer reaches 0 point, the damper is opened by the cams.

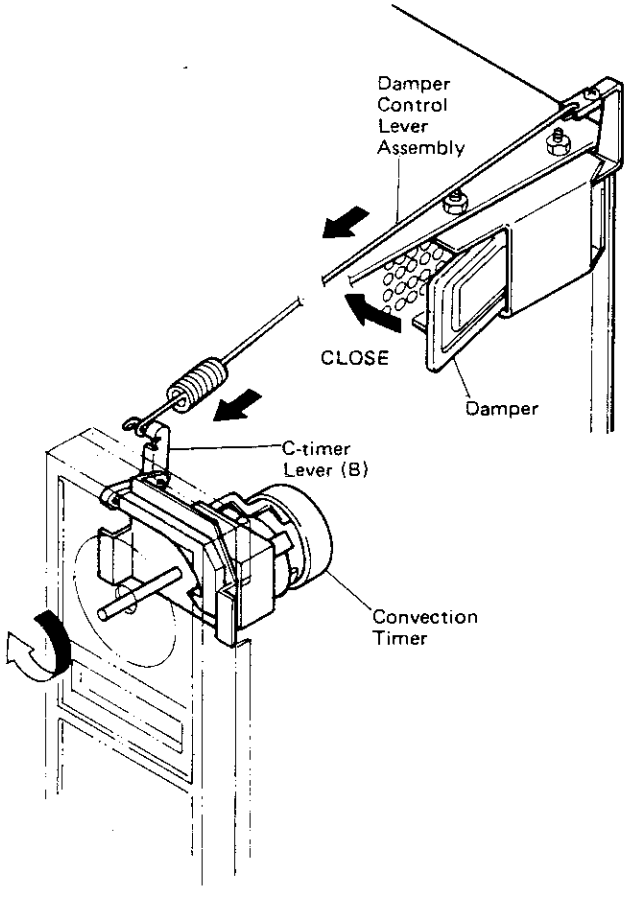


Figure 7 Convection Timer Desired Time Set

VARI-MOTOR ASSEMBLY

The vari-motor assembly consists of vari-motor, vari-switch, gears, cam roller, roller shaft, mounting bracket, etc. The motor driven cam roller activates the vari-switch on and off intermittently within a 30 seconds time base supplying power to the power transformer. The repetition rate can be changed by turning the mode selector.

Vari-switch:

The vari-switch is operated by the cam roller. If the variable cooking mode selector is set at WARM. DEFROST, SIMMER or ROAST position, 220/240 volts A.C. is supplied to the power transformer intermittently within a 30 seconds time base.

The vari-switch is part of the vari-motor assembly and is not replaceable separately.

The following chart shows the vari-switch operation in the various modes.

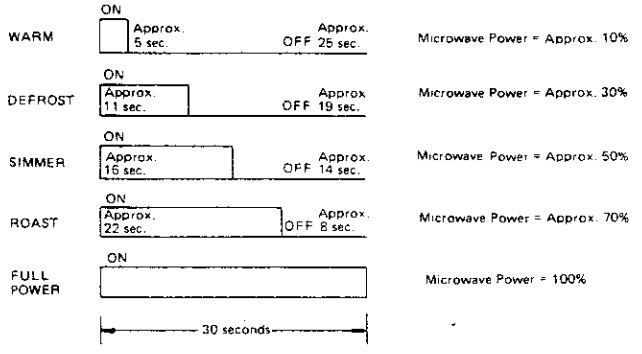


Figure 8.

SELECT RELAY

The contacts of the select relay complete the circuit to the fan motor and oven lamps. The relay is activated by 220/240 volts A.C. supplied from contact ② of the convention timer.

MAGNETRON THERMO CUT-OUT

The thermo cut-out located on the magnetron assembly, is designed to prevent damage to the magnetron if an overheated condition develops in the tube due to cooling fan failure, obstructed air ducts, dirty or blocked air intake, etc. Under normal operation, the thermo cut-out remains closed. However, when abnormally high temperatures within the magnetron approaches a critical level, the thermo cut-out will interrupt the circuit to the power transformer, and will interrupt the cook cycle. When the magnetron has cooled to safe operating temperature, the thermo cut-out closes and the cook cycle will resume.

OVEN THERMO CUT-OUT

The contacts of the oven thermo cut-out are open at normal temperature. During convection cooking or upon completion of cooking, the contacts of the oven thermo cut-out will close when the temperature of the thermo mounting section reaches approximately 100°C. The contacts of the oven thermo cut-out will then remain closed so that the fan motor will continue to run to cool the oven cavity. When the temperature in the oven cavity reaches approximately 80°C, the thermo cut-out contacts open turning off the fan motor.

TEMPERATURE SENSOR CONTROL ASSEMBLY

The temperature sensor control assembly employs a contactless phase control method using a temperature detecting thermistor. The on-off control of the sheath heater is made by a triac of 16A in rating. The control range is 40°C (fixed) and 120°C to 275°C, and temperature is set by an adjustable-slide resistor. The relationship between thermistor resistance and internal oven temperature is shown in the following table.

Internal Oven Temperature	Thermistor Resistance
40°C	138.4 ~ 167.9 kΩ
120°C	10.35 ~ 12.44 kΩ
275°C	0.17 ~ 0.18 kΩ

If the thermistor circuit is opened, current is continuously fed to the sheath heater and contrarily, if shortcircuited, current supply is stopped.

The circuit is a transformer-less type.

THERMISTOR

The thermistor is of negative temperature coefficient type. The temperature in the oven cavity is detected through the resistance of the thermistor, and then the temperature sensor control assembly causes the triac to operate, thus the current to the browning element is turned ON/OFF.

CONVECTION COOKING SYSTEM

This oven is designed with a hot air heating system where food is not directly heated up by the sheath heater, but is instead heated by forced circulation of the hot air produced by the sheath heater.

The air heated by the sheath heater is circulated through the convection passage provided on the outer casing of the oven cavity by means of the convection fan which is driven by the convection motor. It then enters the inside of oven through the vent holes provided on the top and left side of the oven. Next, the hot air heats up the food on the turntable and leaves the oven cavity through the vent hole in the center of the oven cavity ceiling.

Without leaving the oven, this hot air is reheated by the sheath heater, passes through the convection passage and enters the inside of the oven cavity again, in a continuing cycle.

In this way, the hot air circulates inside the oven cavity to raise its temperature and, at the same time, comes into contact with the food begin cooked.

When the temperature inside the oven cavity reaches the preset temperature, the sheath heater is de-energized. When the temperature inside the oven cavity thereafter drops below the preset temperature, the sheath heater is energized again. In this way, the inside of the oven cavity is maintained at approximately the preset temperature.

When the convection timer reaches 0 point, the sheath heater is de-energized and the convection fan stops operating.

Although the damper will open and the fan motor normally turn off when the convection timer reaches "0", if the temperature of oven thermo cut-out has reached approximately 100°C or higher at that time (or later) the fan motor will continue to operate, cooling the oven. Pulling in ambient air through the vent holes in the damper section, the fan motor circulates it through the oven and then exhausts it out through the rear vent and condensate compartment. Once the oven temperature has been lowered to approximately 80°C, the fan motor stops operating.

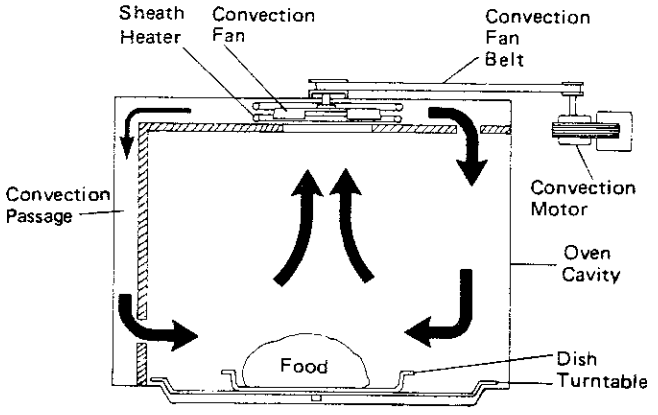


Figure 9.

SHEATH HEATER

The sheath heater is located on the top of the oven cavity as illustrated in Figure 9. It is intended to heat air driven by the convection fan. The heated air is kept in the oven and forcedly circulated and reheated by the sheath heater.

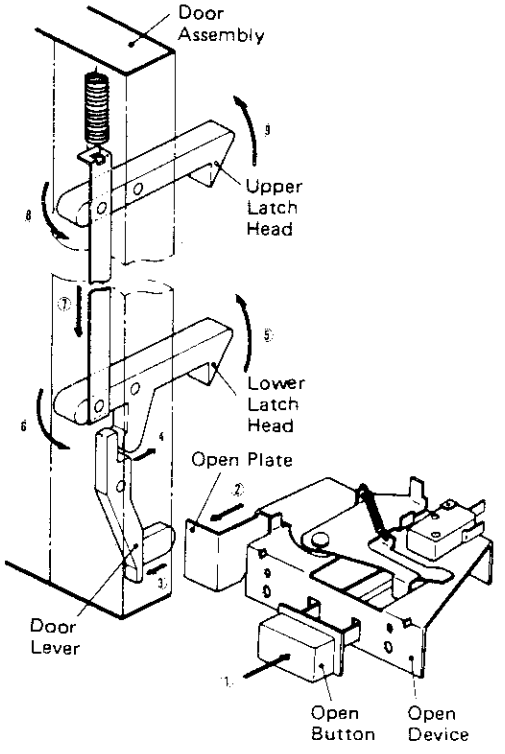


Figure 10. Door Open Mechanism

DOOR OPEN MECHANISM

The door can be opened by pushing the open button on the control panel, refer to Figure 10.

When the open button is pushed, the open plate on the open device pushes in the door lever on the door, operating the latch head linkage. The lower and upper latch heads are moved upward, and are released from the lower and upper latch hooks.

Now, the door can be opened.

UPPER AND LOWER LATCH SWITCHES

The upper latch switch is mounted in the upper latch hook and the lower latch switch is mounted in the lower latch hook. They are activated by the latch heads on the door. When the door is opened, the switches interrupt the circuit to all components except the oven lamps and fan motor. A cook cycle cannot take place until the door is firmly closed thereby activating both latch switches.

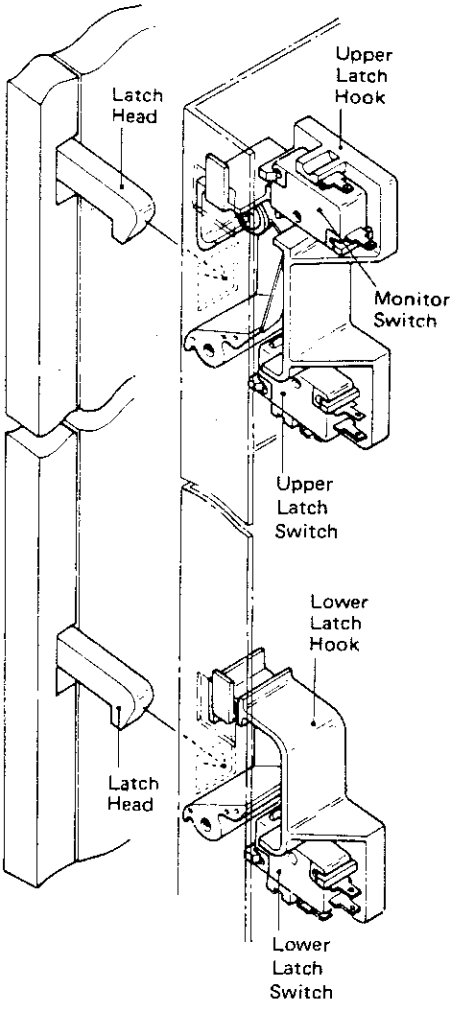


Figure 11. Latch Switches and Monitor Switch

Note: The monitor switch is provided on Australia Model.

MONITOR SWITCH (AUSTRALIA MODEL)

The monitor switch mounted on the upper latch hook is activated (the contacts opened) by the latch head on the door while the door is closed. This switch is intended to render the oven inoperative by means of blowing the fuse when the contacts of the lower latch switch fail to open when the door is opened.

Functions;

1. When the door is opened, the monitor switch contacts close (to ON condition) due to their being normally closed. At this time the upper and the lower latch switches are in OFF condition (contacts open) due to their being normally open contact switches.
2. As the door goes to a closed position, the monitor switch contacts are first opened and then the upper and lower latch switch contacts close. (In case of opening the door, each of these switches operate inversely.)
3. If the door is opened and the lower latch switch contacts fail to open, the fuse blows simultaneously with the closing of the monitor switch contacts.

CAUTION: BEFORE REPLACING A BLOWN FUSE, TEST THE LOWER LATCH SWITCH AND MONITOR SWITCH FOR PROPER OPERATION. (REFER TO THE TEST PROCEDURE ON PAGE 24.)

POWER TRANSFORMER

The transformer consists of three windings: primary, filament and high voltage.

During a cook cycle, the 240/220 volts A.C. applied to the primary winding of the transformer through the cook relay contacts is converted to 3.15/3.4 volts A.C. on the filament winding and approximately 2400/2300 volts A.C. on the high voltage winding. The 3.15/3.4 volts A.C. voltage heats the magnetron filament. This causes the tube cathode to readily emit the electrons necessary for tube conduction whenever the negative 4000 D.C. voltage is applied to the cathode.

The 2400/2300 volts A.C. voltage is fed to the voltage doubler circuit.

VOLTAGE DOUBLER CIRCUIT

The voltage doubler circuit consists of a rectifier and a capacitor. The 2400/2300 volts A.C. from the high voltage winding of the power transformer is applied to the voltage doubler circuit, where it is rectified and converted to approximately 4000 volts negative D.C. needed for magnetron operation.

Rectifier: The rectifier is solid state device that allows current flow in one direction, but prevents current flow in the opposite direction. This acts as rectifier changing alternating current into pulsating D.C.

High voltage capacitor: The capacitor is able to store energy on one half of the power cycle and release it along with the transformer output to produce approx. 4000 negative D.C. volts to the magnetron.

MAGNETRON TUBE

The basic magnetron tube is a cylindrical cathode within a cylindrical anode surrounded by a magnetic field. When the cathode is heated by the filament winding of the power transformer,electrons are given off by the cathode. These negatively charged electrons are attracted to the more positive anode of the tube when the negative 4000 D.C. voltage is applied to the cathode.

Ordinarily, the electrons would travel in a straight line from the cathode to the anode as shown in Figure 12. But the addition of a magnetic field, provided by permanent magnets surrounding the anode, causes the electrons to take an orbital path between the cathode and anode, Figure 13. As the electrons approach the anode, they travel past the small resonant cavities that are part of the anode. Interaction occurs, causing the resonant cavities to oscillate at the very high frequency of 2450 megahertz. This RF energy is radiated from the magnetron antenna into the waveguide into the cooking cavity feedbox, and finally into the cooking cavity where food has been placed to be cooked.

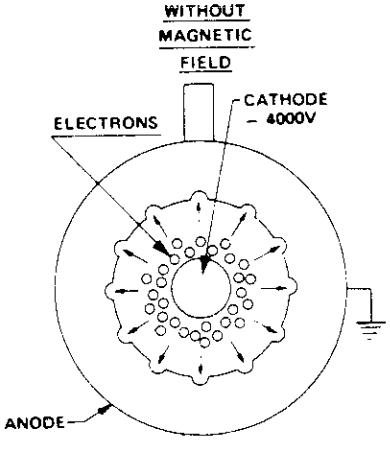


Figure 12. Basic Magnetron without Magnetic Field

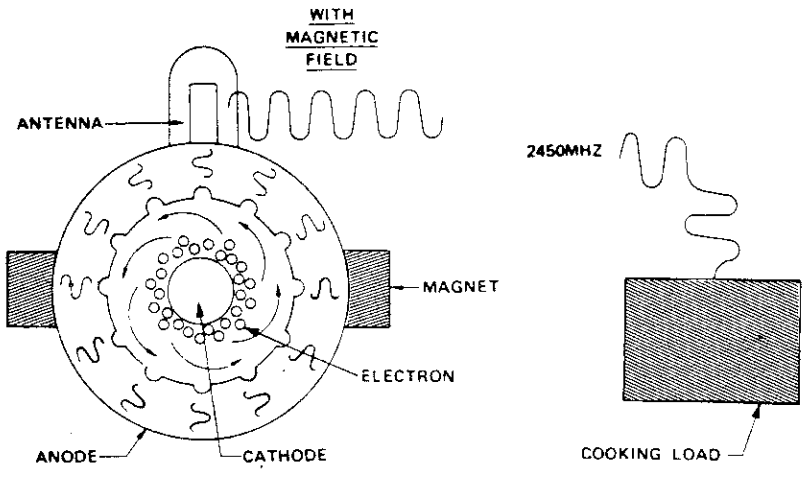


Figure 13. Basic Magnetron with Magnetic Field

CHAPTER III
SERVICING
TROUBLESHOOTING GUIDE

When troubleshooting the convection microwave oven, it is helpful to follow the Sequence of Operation in performing the checks.
Many of the possible causes of trouble will require that a specific test be performed. These tests are given a procedure letter which will be found in the "Test Procedures and Adjustment" section.

IMPORTANT: Australia Model.
If the oven becomes inoperative because of a blown fuse in the lower monitor switch circuit, check the lower latch switch and monitor switch before replacing the fuse.

PROBLEM	POSSIBLE CAUSE	TEST PROCEDURE OR CORRECTION
OFF CONDITION		
Home fuse blows when power cord is plugged into wall receptacle.	Shorted wire in power cord or wire harness.	Replace cord or check wiring.
Oven fuse blows when power cord is plugged into wall receptacle.	Shorted wire in power cord or wire harness.	Replace power cord or check and repair wire harness.
	Defective monitor switch. (Australia)	Procedure F.
Oven lamp does not light with door opened.	No power in home.	Check wall outlet.
	Open wire in power cord or wire harness.	Replace same or repair wiring.
	Defective oven lamp.	Replace both lamps.
	Defective upper latch switch.	Procedure E.
	Open or loose wire connection to the above components.	Check wiring.
	Blown monitor fuse.	Procedure G.
Fan motor does not operate.	Defective lower latch switch.	Procedure E.
	Defective fan motor.	Replace.
	Open or loose wire connection.	Check wiring.
MICROWAVE COOKING CONDITION		
Turntable does not operate when cook switch is depressed.	Defective cook switch.	Replace.
	Defective upper latch switch.	Procedure E.
	Defective lower latch switch.	Procedure E.
	Defective microwave timer contacts (2) - (3).	Procedure H.
	Defective convection timer contacts ④-⑤ and ①-②.	Procedure H.
	Defective turntable motor.	Replace.
	Open or loose wire connection to the above components.	Check wiring.
Turntable operates, but oven lamp does not light.	Defective oven lamp.	Replace.
	Defective select relay contacts ⑤-⑥.	Procedure M.
	Open or loose wire connection to the above components.	Check wiring.

TROUBLESHOOTING GUIDE (CONT'D)

PROBLEM	POSSIBLE CAUSE	TEST PROCEDURE OR CORRECTION
Turntable operates, but fan motor does not operate.	Defective fan motor.	Replace.
	Defective select relay.	Procedure M.
	Open or loose wire connection to the above components.	Check wiring.
Turntable operates, but microwave lamp does not light.	Defective microwave lamp.	Replace.
	Defective magnetron thermo cut-out.	Procedure I.
	Open or loose wire connection to the above components.	Check wiring.
Microwave lamp lights, but microwave timer does not operate.	Defective microwave timer.	Procedure H.
	Open wiring in circuit to the microwave timer.	Check wiring.
Microwave lamp lights, but vari-motor does not operate.	Defective vari-motor.	Procedure L.
	Open wiring in circuit to the vari-motor.	Check wiring.
Oven seems to be operating, but little or no heat is produced in oven load. (Variable cooking mode selector is set at "FULL POWER" position.)	Defective vari-switch.	Procedure K.
	Defective magnetron assembly.	Procedure A.
	Defective power transformer.	Procedure B.
	Defective rectifier.	Procedure C.
	Defective high voltage capacitor.	Procedure D.
	Open or loose wire connection.	Check wiring.
Oven operates normally when the variable cooking mode selector is set at "FULL POWER" position. but not in any other mode.	Defective vari-motor.	Procedure L.
	Defective vari-switch.	Procedure K.
	Open or loose wire connection.	Check wiring.
Oven goes into cook cycle, but extremely uneven heating is produced in oven load.	Turntable does not rotate during cook cycle.	Replace turntable motor or check wiring.
Oven goes into cook cycle, but shuts down before end of cycle.	Magnetron thermo cut-out is open.	Procedure I.
	Open or loose wire connection.	Check wiring.
CONVECTION COOKING CONDITION		
Turntable does not operate when cook switch is depressed.	Defective cook switch.	Replace.
	Defective upper latch switch.	Procedure E.
	Defective lower latch switch.	Procedure E.
	Defective convection timer contacts ⑤ - ⑥ and ② - ③.	Procedure H.
	Defective turntable motor.	Replace.
	Open or loose wire connection to the above components.	Check wiring.

TROUBLESHOOTING GUIDE (CONT'D)

PROBLEM	POSSIBLE CAUSE	TEST PROCEDURE OR CORRECTION
Turntable operates but oven lamp does not light.	Defective oven lamp.	Replace both lamps.
	Defective select relay contacts ⑤-⑥.	Proceudre M.
	Open or loose wire connection to the above components.	Check wiring.
Turntable operates, but fan motor does not operate.	Defective fan motor.	Replace.
	Defective select relay contacts ①-②.	Procedure M.
	Open or loose wire connection to the above components.	Check wiring.
Turntable operates, but convection lamp does not light.	Defective convection lamp.	Replace.
	Open wiring in circuit to convection lamp.	Check wiring.
Turntable operates, but convection motor does not operate.	Defective convection motor.	Procedure H.
	Open wiring in circuit to convection motor.	Check wiring.
Turntable operates, but convection timer does not operate.	Defective convection timer contacts.	Procedure H.
	Open wiring in circuit to convection timer.	Check wiring.
Turntable operates, but sheath heater does not heat.	Defective sheath heater.	Procedure P.
	Defective temp. sensor control assemby.	Procedure O.
	Defective thermistor.	Procedure N.
	Open or loose wire connection to the above components.	Check wiring.
Temperature in the oven cavity is lower or higher than preset temperature.	Defective sheath heater.	Procedure P.
	Defective temp. sensor control assembly.	Procedure O.
	Defective convection motor.	Procedure H.
	Defective thermistor.	Procedure N.
	Defective drive mechanism of convection fan.	Check.
By setting the temperature control to 250°C, followed by approx. 10-minute convection cooking, and when the timer returnes to 0 point, the fan motor does not run.	Defective oven thermo cut-out.	Procedure J.
	Defective fan motor.	Replace.
By setting the temperature control to WARM, followed by approx. 10-minute convection cooking, and when the timer has returned to 0 point, the fan motor keeps running.	Defective oven thermo cut-out.	Procedure J.

TEST PROCEDURES

PROCEDURE LETTER	COMPONENT TEST
A	MAGNETRON ASSEMBLY TEST

DISCHARGE THE HIGH VOLTAGE CAPACITOR BEFORE TOUCHING ANY OVEN COMPONENTS OR WIRING

To test for an open filament, isolate the magnetron from the high voltage circuit. A continuity check across the magnetron filament leads should indicate less than 1 ohm.

To test for a shorted magnetron, connect the ohmmeter leads between the magnetron filament leads and chassis ground. This test should indicate an infinite resistance. If there is little or no resistance the magnetron is grounded and must be replaced.

Power output of the magnetron can be measured by performing a water temperature rise test. This test should only be used if above tests do not indicate a faulty magnetron and there is no defect in the following components or wiring: rectifier, high voltage capacitor and power transformer.

MICROWAVE OUTPUT POWER.

Microwave output power from the magnetron can be measured by way of substitution, i.e. it can be measured by using water load how much it can be absorbed by the water load. To measure the microwave output power in the microwave oven, the relation of calorie and watt is used.

When P (W) heating works for t (second), approximately P·t/4.2 calorie is generated. On the other hand, if the temperature of the water with V (ml) rises ΔT (°C) during this microwave heating period, the calorie of the water is $C \cdot \Delta T$.

The formular is as follows;

$$\frac{P \cdot t}{4.2} = V \cdot \Delta T$$

$$P = \frac{4.2 \cdot V \cdot \Delta T}{t} \quad (W)$$

Our condition for the water load is as follows;

Water load . . . .2000 ml
Heating time. . . 120 seconds (2 minutes)

$$P = 70 \times \Delta T$$

Measuring method;

1. Put the water load of two (2) litres on the center of the oven shelf.
   The water load should be arranged in two (2) Pyrex beakers, the size of which is one (1) litre, and be placed at right and left, side by side, on the oven shelf.
2. Measure the temperature of water before heating and also after heating during two minutes by microwave, and calculate the temperature rise.
   The temperature rise should be the average of temperature differences measured in each beaker.
3. The output power should be calculated as follows.
   In case the measuring result is not satisfactory, execute the measurement several times and judge the result from the synthetic point of view.
   Microwave output power should be within ±15% of the nominal one.

Calculation of output power;

Microwave output power. . . $P\ (W) = 70 \times \overline{\Delta T}\ (°C)$

$$\overline{\Delta T} = \frac{(\Delta TL + \Delta TR)}{2} \quad : \text{average temperature rise}$$

$$\Delta T_L = (T_{L_2} - T_{L_1})$$

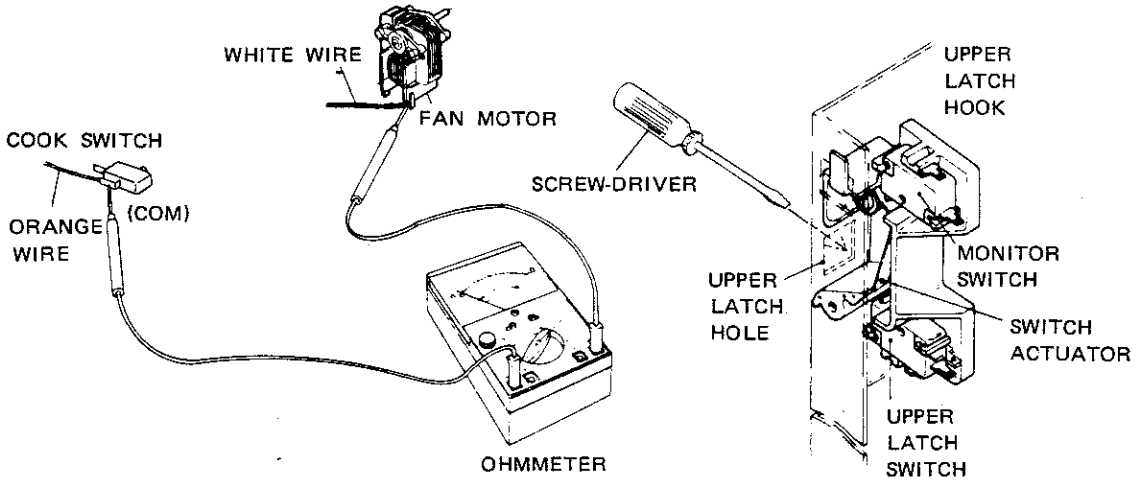
$$\Delta T_R = (T_{R_2} - T_{R_1})$$

T_{L_2} : water temperature after heating in left beaker
T_{L_1} : water temperature before heating in left beaker
T_{R_2} : water temperature after heating in right beaker
T_{R_1} : water temperature before heating in right beaker

TEST PROCEDURES (CONT'D)

PROCEDURE LETTER	COMPONENT TEST
A (Cont'd)	Measuring condition; As the microwave output is affected by several conditions, the measurement should be made carefully with following attentions. 1. Initial temperature of salt water should be 20±1°C. (The salt water should be contained bon (1) percent of salt.) Well and quickly stir the water and the temperature measurement should be done immediately after heating. 2. The graduation of thermometer should be scaled by 0.1°C at minimum and an accurate mercury thermometer is recommended. 3. Water container should be one (1) litre beaker made of Pyrex glass and its diameter approximately 12 cm. 4. Room temperature should be around 20°C. 5. Power supply voltage should be 220/240 volts.
B	POWER TRANSFORMER TEST DISCHARGE THE HIGH VOLTAGE CAPACITOR BEFORE TOUCHING ANY OVEN COMPONENTS OR WIRING. Disconnect the primary input terminals and measure the resistance of the transformer with an ohmmeter. Check for the continuity of the coils with the ohmmeter. On the RX1 scale, the resistance of the primary coil should be less than 1 ohm and the resistance of high voltage coil should be approximately 70 ohms; and the resitane of filament coil should be less than 1 ohm. With 220/240 volts AC applied to the primary winding, the voltage across the filament winding should be approximately 3.15/3.4 volts A.C. (HIGH VOLTAGES ARE PRESENT TO HIGH VOLTAGE TERMINAL, SO EXTREME CAUTION SHOULD BE OBSERVED.)
C	RECTIFIER TEST DISCHARGE THE HIGH VOLTAGE CAPACITOR BEFORE TOUCHING ANY OVEN COMPONENTS OR WIRING. Isolate the rectifier from the circuit. Using the highest ohm scale of the meter, read the resistance across the terminals and observe, reverse the leads to the rectifier terminals and observe meter reading. If a short is indicated in both directions, or if an infinite resistance is read in both directions, the rectifier is probably defective and should be replaced.
D	HIGH VOLTAGE CAPACITOR TEST DISCHARGE THE HIGH VOLTAGE CAPACITOR BEFORE TOUCHING ANY OVEN COMPONENTS OR WIRING. If the capacitor is open, no high voltage will be available to the magnetron. Disconnect input leads and check for short or open between the terminals using an ohmmeter. Checking with a high ohm scale, if the high voltage capacitor is normal, the meter will indicate continuity for a short time and should indicate an open circuit once the capacitor is charged. If the above is not the case, check the capacitor with the ohmmeter to see if it is short circuited between the terminals. If it is short circuited, replace the capacitor.
E	UPPER AND LOWER LATCH SWITCHES TEST Isolate the switch and connect the ohmmeter leads to the common (COM) and normally open (NO) terminals of the switch. The meter should indicate an open circuit with the door opened and a closed circuit with the door closed. With the meter leads connected to the common (COM) and normally closed (NC) terminals of the switch, it should indicate a closed circuit with the door opened and an open circuit with the door closed. In case improper operation is indicated, make the necessary switch adjustment or replacement.

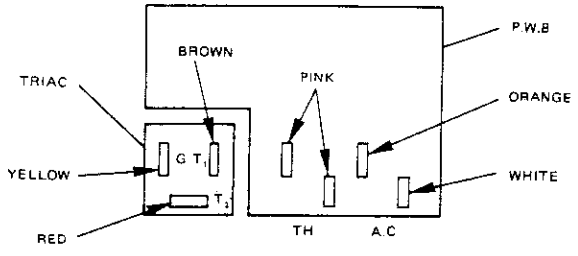
TEST PROCEDURES (CONT'D)

PROCEDURE LETTER	COMPONENT TEST
F	MONITOR SWITCH TEST (AUSTRALIA MODEL) Before performing this test, make sure that the Lower Latch Switch is operating properly referring to the Test Procedure described above. Connect one ohmmeter lead to the cook switch common terminal, and the other lead to the fan motor termainal to which the white wire from the wiring harness is connected. When the door is open, the meter should indicate a closed circuit. When the switch actuator of the upper latch hook is pushed by a screw-driver through the upper latch hole on the front plate of the oven cavity with the door opened (in this condition the plunger of the monitor switch is pushed in), the meter should indicate an open circuit. In case improper operation is indicated, replace the defective switch. 
G	BLOWN FUSE (Australia) If the fuse in the lower monitor switch circuit is blown when the door is opened, check the lower latch switch and monitor switch before replacing the blown fuse. (Refer to above Test Procedure E and F.) In case the fuse is blown by an improper switch operation, replace the defective switch and fuse at the same time. Replace just the fuse if the switches operate normally. CAUTION: REPLACE BLOWN FUSE WITH 10 AMPERE FUSE, PART NO. QFS-CQ001YBEO
H	MICROWAVE TIMER OR CONVECTION TIMER MOTOR TESTS CONTACT Microwave Timer Advance the microwave timer, and then return to "0" position and check for continuity between the terminals. If an open circuit is indicated at the advanced position or a closed circuit is indicated at "0" position, replace the timer. Convection Timer Advance the convection timer, there should be continuity between contacts ⑤ and ⑥ , and no continuity between contacts ⑤ and ④ , with the timer returned to "0", contacts ⑤ to ⑥ should be open, and ⑤ to ④ to ① should show continuity. Advance the convection timer, there should be continuity between contacts ② and ③ , and no continuity between contacts ② and ① with the timer returned to "0", contacts ② and ③ should be open, ② and ① should show continuity. MOTOR With the oven operating, check with a voltmeter at the timer motor lead. If voltage is present, but the timer motor does not turn, replace the timer. If no power, check for loose or broken wiring.

TEST PROCEDURES (CONT'D)

PROCEDURE LETTER	COMPONENT TEST
I	**MAGNETRON THERMO CUT-OUT TEST** A continuity check across the thermo cut-out terminals should indicate a closed circuit unless the temperature of the thermo cut-out reaches approximately 104°C. The thermo cut-out resets automatically at approximately 79°C. An open thermo cut-out indicates overheating of the magnetron assembly. Check for restricted air flow to the magnetron through the opening in the chassis base, especially the cooling duct.
J	**OVEN THERMO CUT-OUT TEST** A continuity check across the thermo cut-out terminals should indicate an open circuit unless the temperature of the thermo cut-out reaches approximately 100°C. The thermo cut-out opens automatically at approximately 80°C.
K	**VARI-SWITCH TEST** The vari-switch is activated by the vari-motor. When the variable cooking mode selector is set at "FULL POWER" position, the cam is placed far away from the cam lever. In this condition, the vari-switch is turned ON by a spring action of the cam lever. The vari-switch can be checked with an ohmmeter. With the meter leads connected to the common (COM) and normally closed (NC) terminals of the switch, it should indicate an open circuit with the cam lever released and a closed circuit with the cam lever depressed. If improper operation is indicated, replace the vari-motor assembly.
L	**VARI-MOTOR TEST** The vari-motor rotates two (2) revolutions per minute. Check if 220/240 volts is present between the motor terminals. If voltage is present, but the motor does not turn, replace the vari-motor assembly. If no voltage is present, check for loose or broken wire connections.
M	**SELECT RELAY TEST** Disconnect the wire leads from relay coil terminals ㉑ and ㉒ . A continuity check of the relay coil should indicate 2500 ~ 3000 ohms. Supply 220/240 volts A.C. to the relay coil terminals, and then check if there is a continuity between the contacts of relay.
N	**THERMISTOR TEST** Disconnect leads from the thermistor and remove the thermistor. Measure the resistance of the thermistor by the ohmmeter. Room Temp. | Resistance 20°C~30°C | 140 ~ 390 kilo ohms If the above is not satisfied, replace the thermistor.

TEST PROCEDURES (CONT'D)

PROCEDURE LETTER	COMPONENT TEST
O	**TEMPERATURE SENSOR CONTROL ASSEMBLY TEST** 1. Inspect whether or not the specified leads are connected to the input terminals of the printed wiring board (PWB) as illustrated below. Correct if wrong.  2. Connect a voltmeter across the T2 terminal (RED) of the triac and the AC input terminal (white) of the PWB as in the above diagram. Set the temperature control knob to 120°C and operate in the convection mode. The voltmeter will indicate 220/240V implying power feeding to sheath heater. In about 5 minutes, the internal oven temperature will reach 120°C and the voltmeter reading will show "0" volts. When the internal oven temperature decreases below 120°C, power supply to the sheath heater is again switched on and the voltmeter will indicate 220/240V. This on-off cycling of power supply will be repeated. If the above processes do not take place. Replace the temperature sensor control assembly. Connect the following resistors to TH terminal instead of thermistor. 167.9 ~ 145 ~ 125.5kΩ corresponding to WARM (40°C) 12.44 ~ 11.4 ~ 10.35kΩ corresponding to 120°C 0.1831 ~ 0.175 ~ 0.1668kΩ corresponding to MAX. (275°C) Furthermore, connect a voltmeter or oven lamp across T2 terminal of triac and AC terminal (WHT). Load ON within the above resistance range will show that the sensor control assembly is normal.
P	**SHEATH HEATER TEST** Make sure the sheath heater is fully cooled and test the followings; a. Disconnect wire leads and measure the resistance with an ohmmeter. On the Rx1 scale, the resistance between the sheath heater terminals should be approximately 32.3/38.4 ohms. b. Disconnected wire leads and measure the insulation resistance with 500V–100MΩ insulation resistance meter. The insulation resistance between sheath heater terminal and cavity should be more than 0.5MΩ.

CHAPTER IV

COMPONENT REPLACEMENT AND ADJUSTMENT PROCEDURE

WARNING: to avoid possible exposure to microwave energy;

A. Before operating the oven;
   1. Make sure that unlatching the door slowly is accompanied by a click indicating actuation of the latch switches.
   2. Check visually the door seal for arcing and camage.

B. Do not operate the oven until after repair if any of the following conditions exist;
   1. Door does not close firmly against the front of appliance.
   2. There is a broken door hinge or support.
   3. The door gasket or seal is damaged.
   4. The door is bent or warped.
   5. There is any defective parts in the interlock, oven door or microwave generating and transmission assembly.
   6. There is any other visible damage to the oven.

C. Do not operate the oven;
   1. Without the RF gasket.
   2. If the waveguide and oven cavity are not intact.
   3. If the door is not closed.

OUTER CASE REMOVAL

To remove the outer case, refer to Figure 14 and proceed as follows:

1. Disconnect the oven from the power supply.
2. Remove the screws from the rear and along the side edges of the case.
3. Slide the entire case back about 1 inch (3 cm) to free it from the retaining clips on cavity face plate.
4. Lift the entire case from the unit.

CAUTION: DISCHARGE THE HIGH VOLTAGE CAPACITOR BEFORE TOUCHING ANY OVEN COMPONENTS OR WIRING.

OVEN LAMP REMOVAL

1. Disconnect the oven from the power supply.
2. Loosen the screw to open the lamp access cover, and then remove the oven lamp.

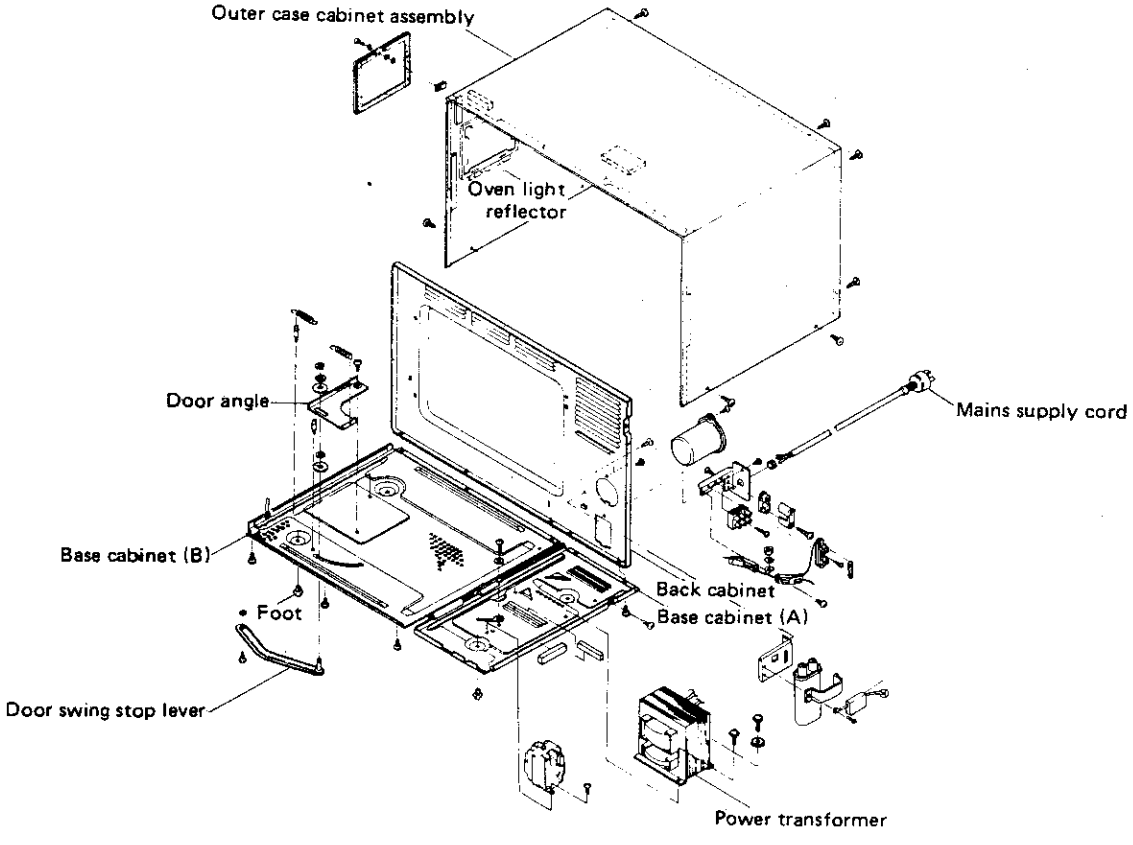


Figure 14. Outer Case and Chassis Components

FAN MOTOR REMOVAL

1. Disconnect the oven from the power supply and remove the outer case.
2. Discharge the high voltage capacitor.
3. Disconnect the wire leads from the fan motor.
4. Remove the four (4) screws holding the chassis support to the back cabinet, cooling duct (A), convection motor mounting plate and control panel back plate.
5. Release the tab which is provided on the cooling duct (B) to hold the cooling duct (A).
6. Remove the duct (A) with the fan motor from the unit.
7. Remove the fan blade from the fan motor shaft by pulling the fan retainer clip.
8. Remove the two (2) screws and nuts holding the fan motor. The fan motor is now free.

TURNTABLE MOTOR REMOVAL

1. Disconnect the oven from the power supply and remove the outer case.
2. Discharge the voltage capacitor.
3. Remove the one (1) screw holding the door open angle of the base cabinet (B) to the door.
4. Remove the seven (7) screws holding the base cabinet (B) to the oven cavity and back cabinet.
5. Shift the base cabinet (B) to the left to release the tab of the base cabinet (B) from the base cabinet (A).
6. Remove the base cabinet (B).
7. Remove the four (4) screws holding the turntable motor to the oven cavity bottom.
8. Take out the turntable motor with the leads attached.
9. Disconnect the wire leads from the turntable motor. The motor is now free.

CONVECTION MOTOR REMOVAL

1. Disconnect the oven from the power supply and remove the outer case.
2. Discharge the high voltage capacitor.
3. Remove the four (4) screws holding the chassis support to the back cabinet, cooling duct (A), convection motor mouting plate and control panel back plate.
4. Remove the one (1) nut holding the convection motor mounting plate to the waveguide flange.
5. Pull the motor mounting plate.
6. Disconnect the two (2) wire leads and remove the two (2) screws holding the mounting plate to the motor.

Note: The motor mounting plate with the convection motor should be installed in close contact with the waveguide flange. Otherwise, the revolution of the convection fan belt may be disrupted.

SHEATH HEATER OR CONVECTION FAN REMOVAL

1. Disconnect the oven from the power supply and remove the outer case.
2. Discharge the high voltage capacitor.
3. Remove the one (1) screw holding the damper lever to the damper plate, and remove the lever.
4. Remove the fan motor and convection motor.
5. Disconnect the four (4) wire leads from the sheath heater and thermistor.
6. Remove the three (3) screws holding the steam duct (B) to the oven cavity flange, and the thermal protection plate (D), and remvove the one (1) nut holding the steam duct (B) to the damper angle, and release the three (3) tabs holding the steam duct (B) in place.
7. Remove the four (4) screws and release four (4) tabs holding the thermal protection cover, and remove it.
8. Remove the three (3) screws holding the steam duct (A) to the oven cavity flange and thermal protection plate (D), and release the seven (7) tabs holding the steam duct (A) in place.
9. Remove the two (2) screws and release the two (2) tabs holding the air guide duct (A) in place; and pull it.
10. Remove the one (1) screw and release the two (2) tabs holding the steam duct (E) in place, and pull it.
11. Pull the steam duct (C), thermal protection plate (E), steam duct (A), steam duct (B), thermal protection plate (D) and thermal protection sheet (D).
12. Remove the five (5) screws holding the convection air guide (B) to the convection air guide (A) and oven cavity, and pull the convection air guide (B).
13. Remove the six (6) nuts holding the convection air guide (A) to the oven cavity, and pull it.

Replacement of individual components is as follows.

SHEATH HEATER

1. Remove the two (2) screws holding the convection air guide (D) to the convection air guide (A).
2. Remove the two (2) screws holding the sheath heater insulator (A) to the convection air guide (A).
3. Remove the two (2) screws holding the sheath heater to the sheath heater insulator (B).
4. Remove the sheath heater.

CONECTION FAN

1. Remove the pin.
2. Pull the fan from the fan shaft.

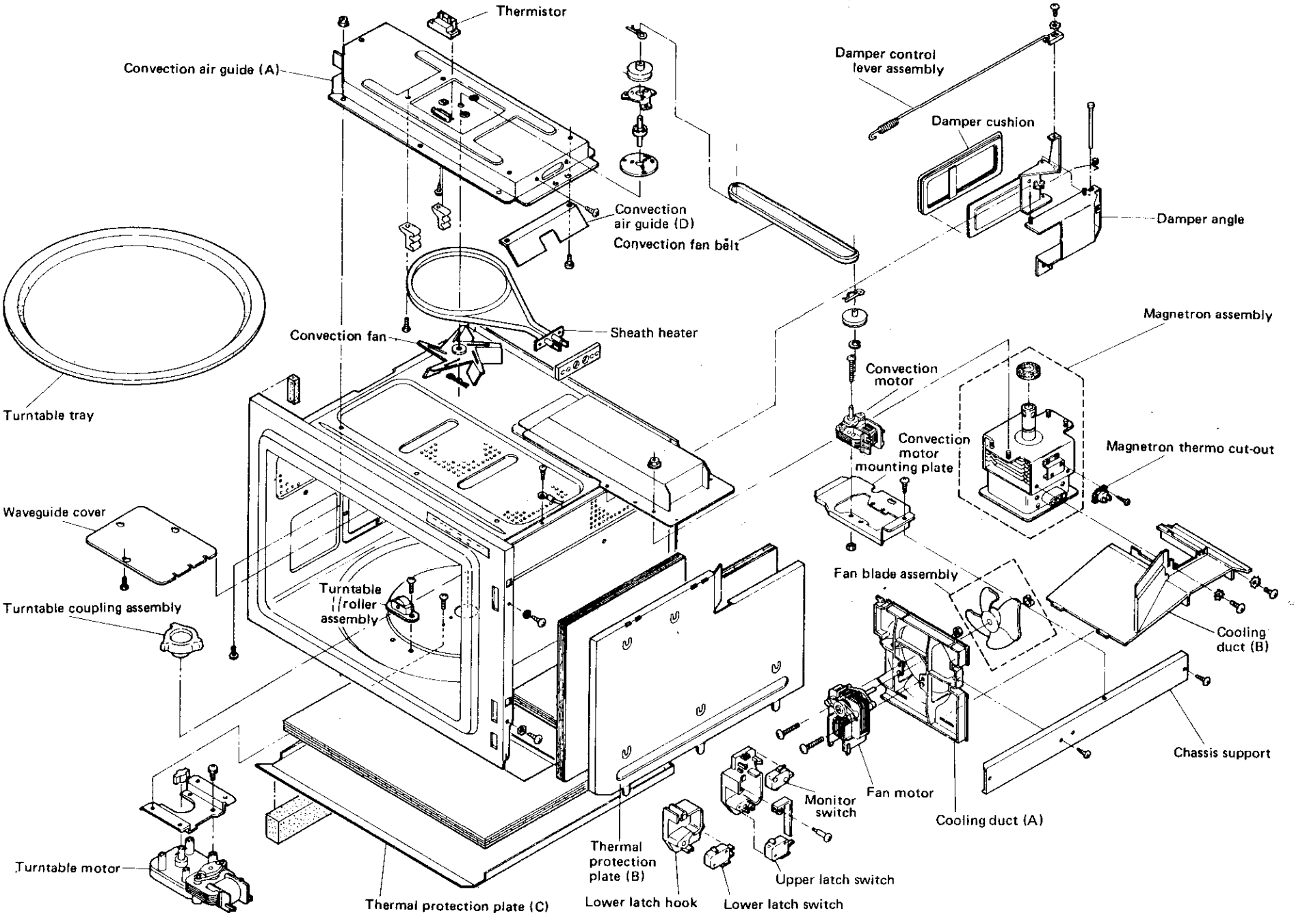


Figure 15. Oven Cavity Components (PART I)

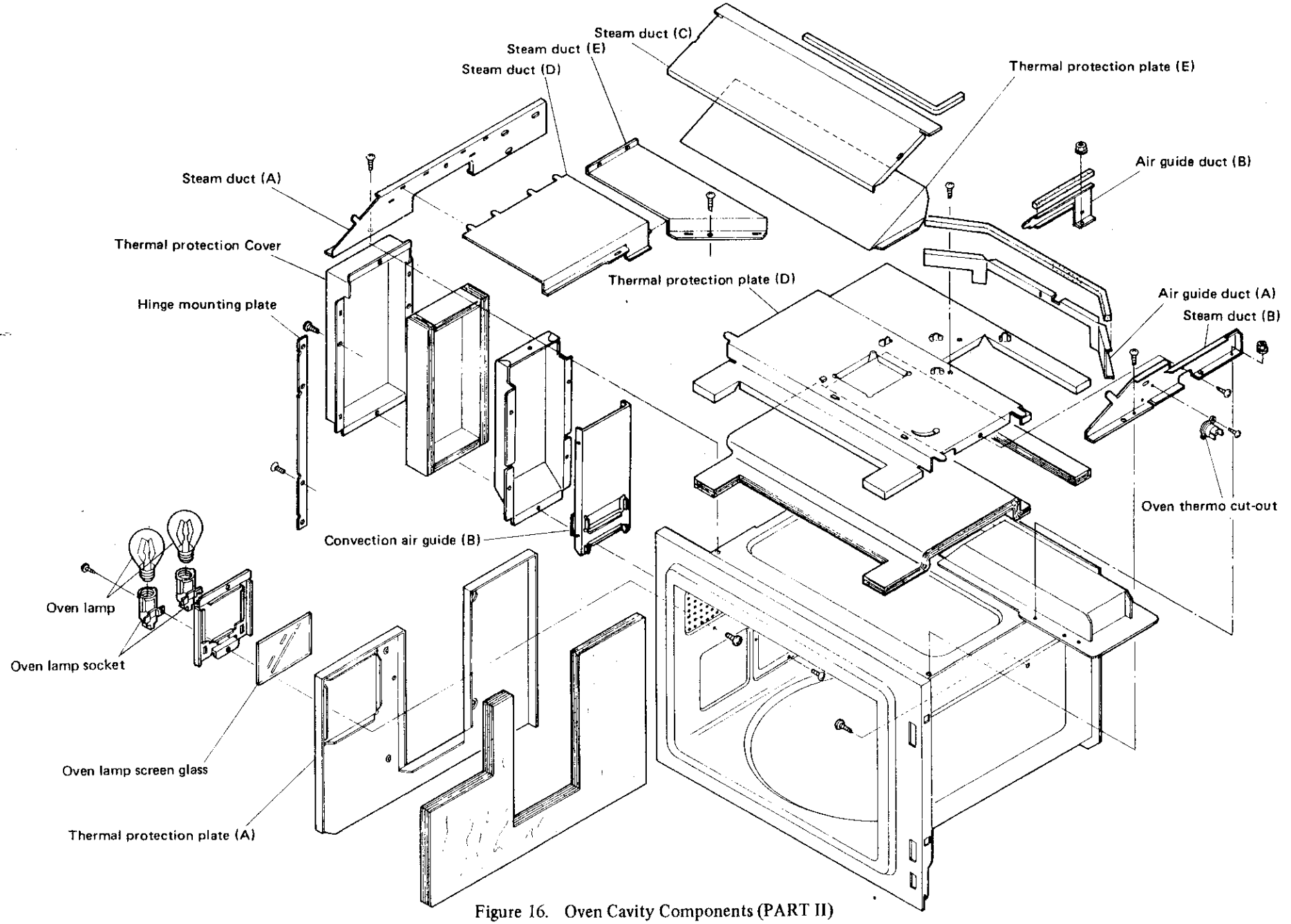


Figure 16. Oven Cavity Components (PART II)

HIGH VOLTAGE COMPONENTS REMOVAL

(High Voltage Capacitor and Rectifier)
To remove the components, proceed as follows.

1. Disconnect the oven power supply and remove the outer case.
2. Discharge the high voltage capacitor.
3. Disconnect the wire leads from the capacitor.
4. Remove the one (1) screw and one (1) washer holding the capacitor mounting bracket to the back cabinet.
5. Take out the high voltage components forward.
6. Remove the one (1) screw and one (1) washer holding the rectifier to the mounting bracket.
7. Djsconnect the rectifier from the capacitor.
   Rectifier and capacitor are now free.

CAUTION: WHEN REPLACING THE RECTIFIER, THE GROUND SIDE TERMINAL MUST BE SECURED FIRMLY WITH A GROUNDING SCREW.

POWER TRANSFORMER REMOVAL

1. Disconnect the oven from the power supply and remove the outer case.
2. Discharge the high voltage capacitor.
3. Disconnect the wire leads from the power transformer, magnetron and high voltage capacitor.
4. Remove the two (2) screws and one (1) washer holding the transformer to the base cabinet (A).
5. Remove the transformer.

MAGNETRON ASSEMBLY REMOVAL

1. Disconnect the oven from the power supply and remove the outer case.
2. Discharge the high voltage capacitor.
3. Disconnect the wire leads from the magnetron assembly and the thermo cut-out.
4. Release the tab which is provided on the cooling duct (B) to hold the cooling duct (A), Figure 15.
5. Carefully remove the four (4) mounting nuts holding the magnetron assembly to the waveguide while supporting the magnetron assembly from below.
6. Lower the magnetron assembly until the tube is clear of the waveguide.
7. Remove the two (2) screws and washers holding the cooling duct (B) to the magnetron assembly.
8. Remove the cooling duct (B) from the unit.
9. Remove the thermo cut-out, and cooling duct (B) by loosening the mounting screws.

CAUTION: WHEN REPALCING THE MAGNETRON, BE SURE THE R.F. GASKET IS IN PLACE AND THE MAGNETRON MOUNTING NUTS ARE TIGHTENED SECURELY.

CONTROL PANEL ASSEMBLY AND COMPONENTS REMOVAL

The complete control panel should be removed for replacement of the components. To remove the control panel, refer to Figure 17 and proceed as follows:

1. Disconnect the oven from the power supply and remove the outer case.
2. Discharge the high voltage capacitor.
3. Disconnect the 6-pin connector from the wire harness.
4. Disconnect the following four (4) wire leads from the panel components
   (1) The one (1) wire lead to the triac on the temp. control unit
   (2) The two (2) wire leads on the P.W. board on the temp. control unit
   (3) The one (1) wire lead on the cook switch
5. Remove the damper lever from the convection timer.
6. Remove the one (1) screw holding the control panel to the chassis support.
7. Remove the two (2) screws holding the bottom edge of the control panel to the base cabinet (A).
8. Remove the one (1) screw holding the control panel to the oven cavity front flange.
9. Pull the control panel forward.

CONVECTION TIMER

1. Disconnect the wire leads from the timer.
2. Pull the timer knob.
3. Remove the three (3) screws holding the timer mounting plate to the panel back plate.
4. Pull the timer with the mounting plate from the panel back plate.
5. Pull the cam from the timer shaft.
6. Remove the three (3) screws holding the timer to the mounting plate.

MICRO TIMER

1. Disconnect the wire leads from the timer.
2. Pull the timer knob.
3. Remove the two (2) screws holding the timer mounting plate to the panel back plate.
4. Pull the timer with the mounting plate from the back plate.
5. Remove the three (3) screws holding the timer to the mounting plate.

VARI-MOTOR ASSEMBLY

1. Disconnect the wire leads from the motor and switch.
2. Pull the control knob.
3. Remove the two (2) screws holding the ass'y to the panel back plate.

TEMPERATURE SENSOR CONTROL AEEMBLY

1. Disconnect the two (2) wire leads of the control panel wire harness from the P.W. board.
2. Pull the control knob.
3. Remove the two (2) screws holding the unit mounting plate to the panel back plate.

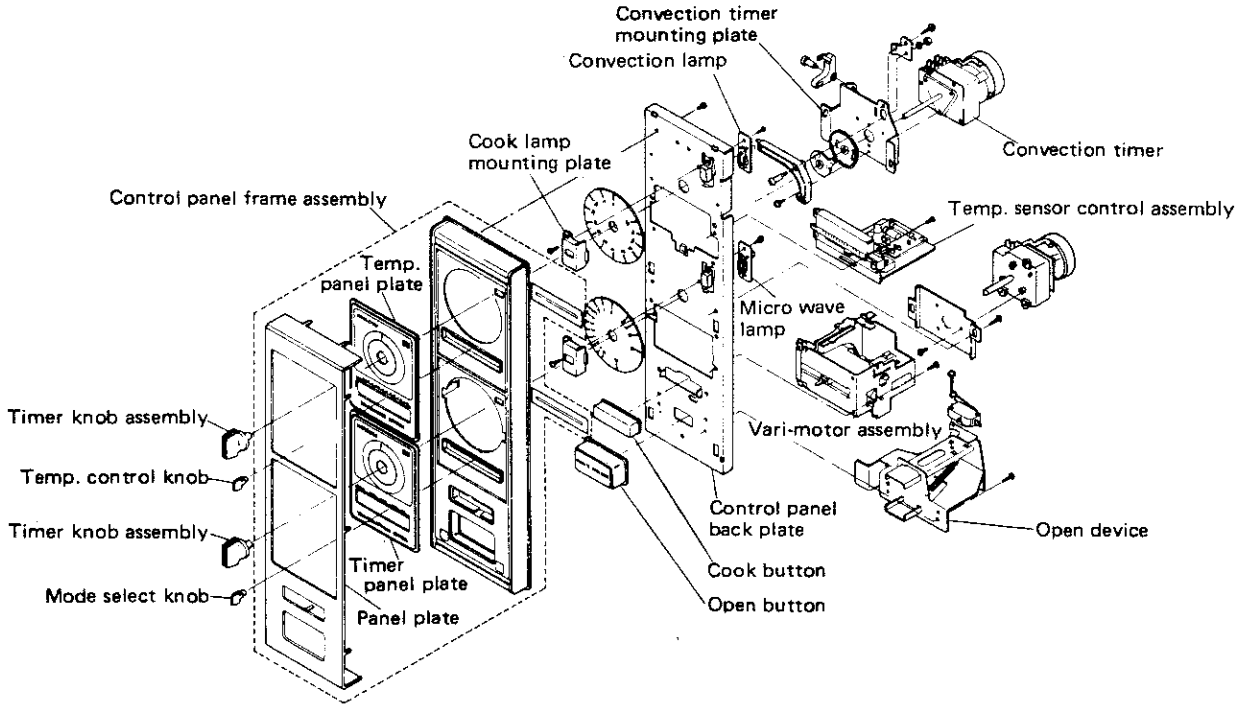


Figure 17. Control Panel and Components

UPPER LATCH SWITCH AND MONITOR SWITCH (AUSTRALIA MODEL) REMOVAL

1. Disconnect the oven from the power supply and remove the outer case.
2. Discharge the high voltage capacitor.
3. Remove the complete control panel assembly, referring to the control panel assembly and component removal.
4. Disconnect the wire leads from the switches.
5. Remove the one (1) screw and washer holding the upper latch hook to the oven cavity front flange.
6. Remove the upper latch hook from the flange by moving it downward.
7. To remove the individual switch from the upper latch hook, push outward the two (2) retaining tabs holding the switch in place.

LOWER LATCH SWITCH REMOVAL

1. Disconnect the oven from the power supply and remove the outer case.
2. Discharge the high voltage capacitor.
3. Remove the complete control panel assembly, referring to the control panel assembly and component removal.
4. Remove the one (1) screw and washer holding the lower latch hook to the oven cavity front flange.
5. Remove the lower latch hook from the flange by moving it downward.
6. Disconnect the wire leads from the switch.
7. Push outward the two (2) retaining tabs holding the switch in place.
8. The switch is now free.

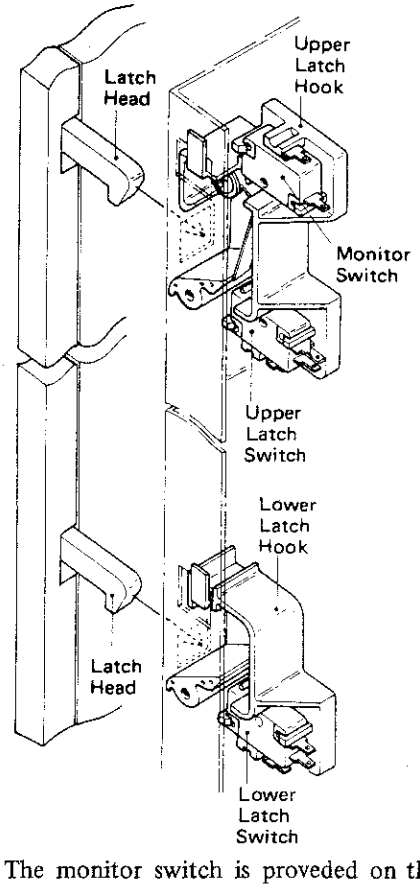
UPPER AND LOWER LATCH SWITCH AND MONITOR SWITCH (AUSTRALIA MODEL) ADJUSTMENT

In case the upper and lower latch switches do not operate properly due to a misadjustment, the following adjustment should be taken.

1. Loosen the one (1) screw holding the upper latch hook to the oven cavity front flange and the one (1) screw holding the lower latch hook to the same flange.
2. With the door closed, adjust the lower latch hook by moving it back and forward and then adjust the upper latch hook by moving it back and forward, or up and down.
   In and out play of the door allowed by the upper and lower latch hooks should be less than 0.5mm.
   The vertical position of the upper latch hook should be placed where the upper latch switch and monitor switch has activated with the door closed.
   Vertical adjustment of the lower latch hook is not possible.
3. Secure the screws with washers firmly.
4. Now, make sure of the upper latch switch operation. If the upper latch switch has not activated with the door closed, loosen the one (1) screw holding the upper latch hook to the oven cavity front flange and adjust the upper latch hook position.

After the adjustment, make sure of the following points:

1. The in and out play of the door remains less than 0.5mm at latched position. First check the upper latch hook position, pushing and pulling the upper portion of door toward the oven face. Then check the lower latch hook position, pushing and pulling the lower portion of door toward the oven face. Both results (plays of the door) should be less than 0.5mm.
2. The upper and lower latch switches interrupt the circuit before the door can be opened.
3. The monitor switch contacts close when the door is opened.
4. Re-install the outer case and check for microwave leakage around the door with an approved microwave survey meter.
   (Refer to Microwave Measurement Procedure.)



NOTE: The monitor switch is proveded on the Australia model.

Figure 17. Latch Switches Adjustment

DAMPER ADJUSTMENT

Where either the damper, convection timer or damper control lever assembly is replaced, install the damper control lever and adjust the operation of the damper as follows:

1. Set the convection timer to the "0" position.
2. Hook the damper control lever assembly on to the convection time lever (B).
3. While drawing the convection time lever (B) backwards, fasten the damper control lever assembly to the damper.

Note: (1) Be careful, do not stretch the spring of the damper control lever assembly while servicing these components.
(2) The damper should have been opened fully until it came into contact with the magnetron.

4. Verify the following.
   (1) When the convection timer is advanced from the "0" setting, the damper must shut off the exhaust port completely.
   (2) When the convection timer is at the "0" point, the damper must be opened fully until it comes into contact with the magnetron.

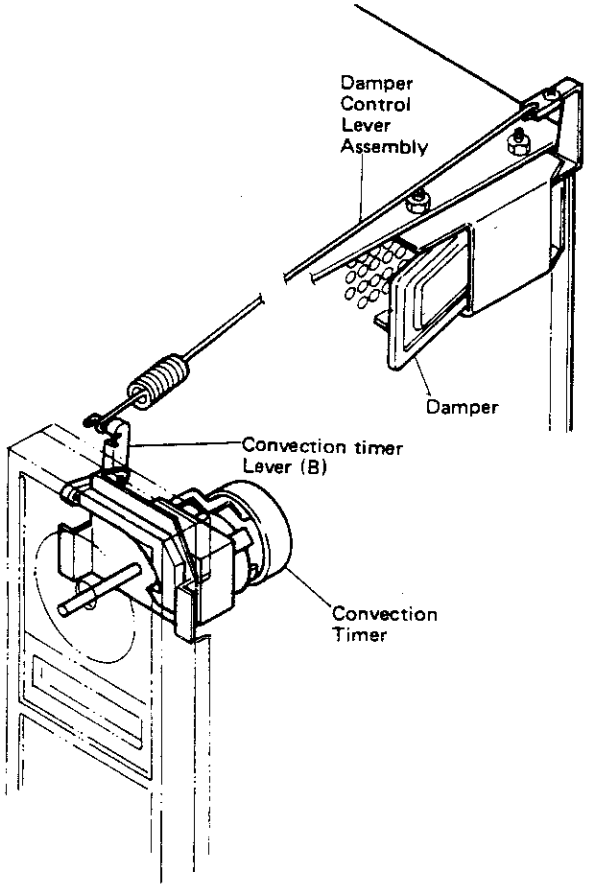


Figure 18. Damper Adjustment

DOOR REPLACEMENT AND ADJUSTMENT

DOOR REPLACEMENT

1. Disconnect the oven from the power supply, and remove the outer case and discharge the high voltage capacitor.
2. Remove the one (1) screw holding the door swing stop lever to the door.
3. Holding the door, remove the four (4) screws securing the door hinge to the oven cavity. The door assembly is now free from the oven cavity.
4. On reinstalling new door assembly, secure the door assembly with the four (4) mounting screws to the oven cavity.
   Make sure the door is parallel with the bottom line of the oven face plate and the latch heads pass through the latch holes correctly.

Note: After any service to the door, an approved microwave survey meter should be used to assure in compliance with proper microwave radiation standards.
(Refer to Microwave Measurement Procedure).

DOOR ADJUSTMENT

When removing and/or loosening hinge such as in the case of a door replacement, the following adjustment criteria are taken. Door is adjusted to meet the following three conditions by keeping screws of hinge loose.

1. Adjust door latch heads at a position where they smoothly catch the latch hooks through the latch openings. Refer to upper and lower latch switches adjustment.
2. Deviation of the door alignment from the horizontal line of cavity face plate to be less than 1.0mm.
3. The door is positioned with its face depressed toward cavity face plate.
4. Reinstall the outer case and check the microwave leakage around the door with an approved microwave survey meter (Refer to Microwave Measurement Procedure.)

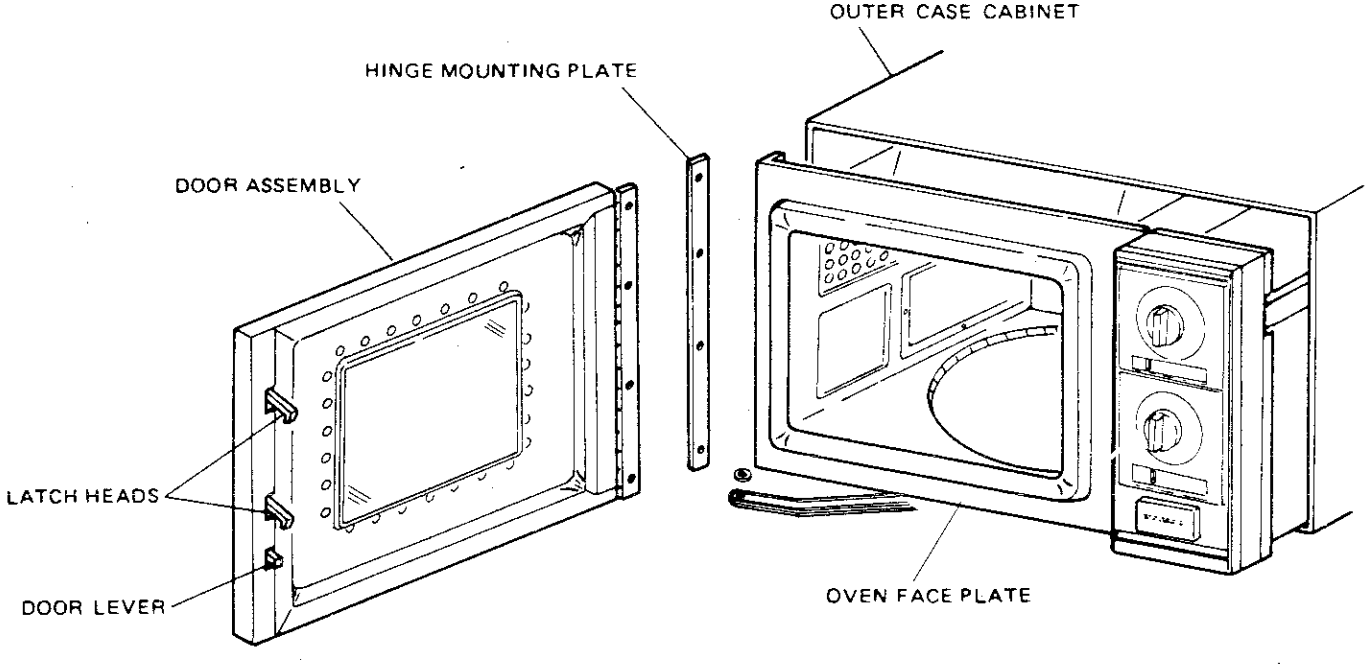


Figure 19. Door Assembly Replacement and Adjustment

MICROWAVE MEASUREMENT

After the adjustment of the door latch switches and door is completed individually or collectively, the following leakage test must be performed with a survey instrument and it must be confirmed that the result meets the requirements of the performance standard for microwave oven.

REQUIREMENT

The safety switch must prevent microwave radiation emission in excess of 5mW/cm^2 at any point 5cm or more from external surface of the oven.

PREPARATION FOR THE TESTING:

Before beginning the actual test for leakage, proceed as follows;

1. Make sure that the test instrument is operating normally as specified in its instruction booklet.
   Important:
   Survey instruments that comply with the requirement for instrumentation as prescribed by the performance standard for microwave ovens must be used for testing.
   Recommended instruments are:
   NARDA 8100
   NARDA 8200
   HOLADAY HI 1500
   SIMPSON 380M
2. Place the turntable tray into the oven cavity.
3. Place the load of 275 ±15ml of water with the addition of one (1) percent by weight of sodium chloride in solution initialy at 20 ±5°C in the centre of the oven tray. The water container should be a low form of 600ml beaker with inside diameter of approx. 8.5cm and made of an electrically nonconductive material such as glass or plastic.
   The placing of this standard load in the oven is important not only to protect the oven, but also to insure that any leakage is measured accurately.
4. Close the door and turn the oven ON with the timer set for several minutes. If the water begins to boil before the survey is completed, replace it with 275ml of the cool salt water.
5. Move the probe slowly (not faster than 2.5cm/sec.) along the gap.
6. The microwave radiation emission should be measured at any point of 5cm or more from the external surface of the oven.

CIRCUIT SUBJECT TO CHANGE
WITHOUT NOTICE
DOOR CLOSED
COOK OFF CONDITION

WIRE COLOUR CODE SYMBOL

RED	: RED	WHT	: WHITE
BRN	: BROWN	BLU	: BLUE
ORG	: ORANGE	BLK	: BLACK
PNK	: PINK		
G-Y	: GREEN AND YELLOW STRIPE		
HV	: HIGH VOLTAGE WIRE		
/18	: SECTIONAL AREA OF	0.8 mm²	
	: NO INDICATION SHOWS	0.3 mm²	
○	: QUICK CONNECT TERMINAL		
●	: SOLDER OR CLINCH TERMINAL		
□	: CONNECTOR		

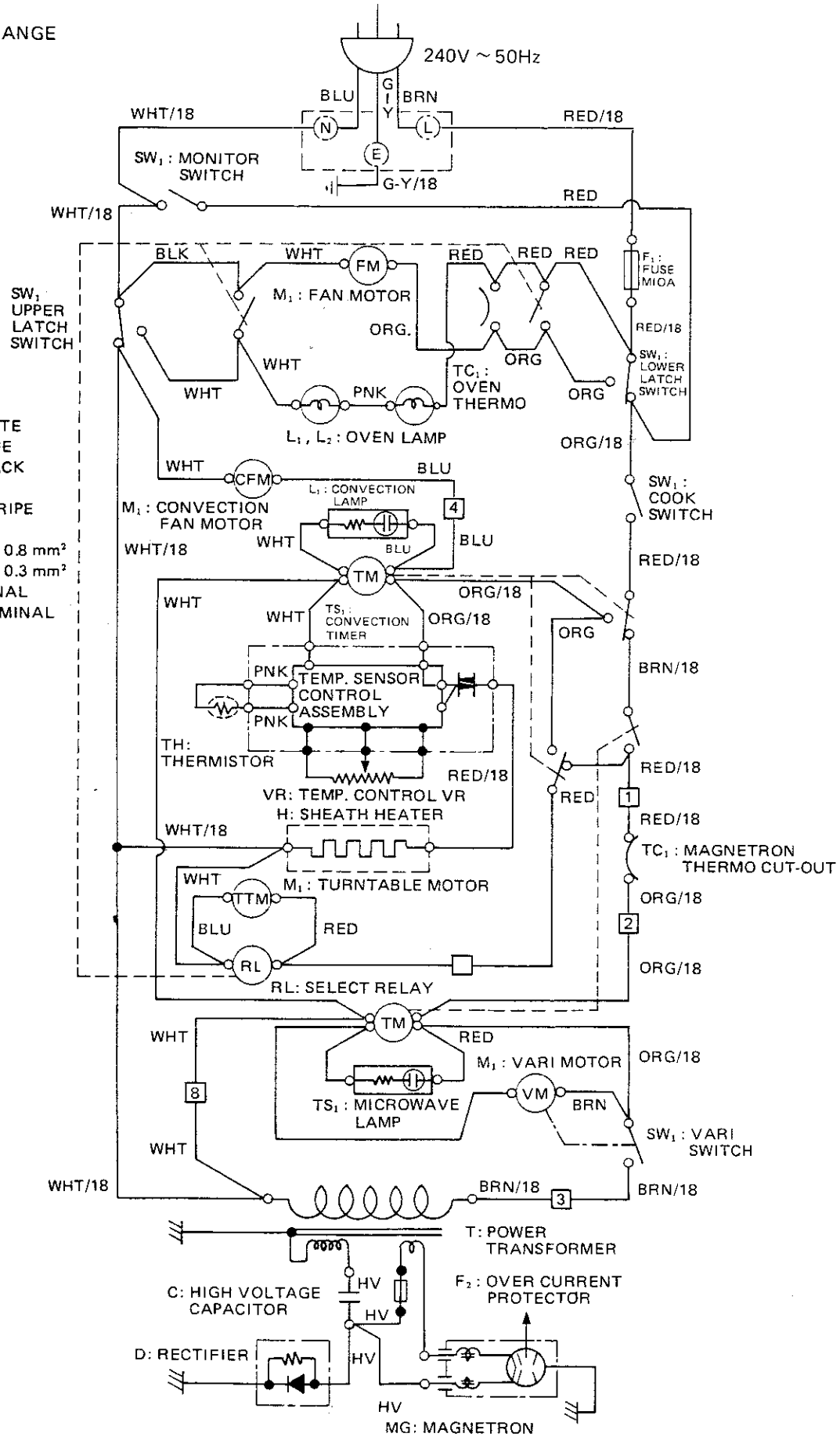


Figure 20. Schematic Diagram (Australia Model)

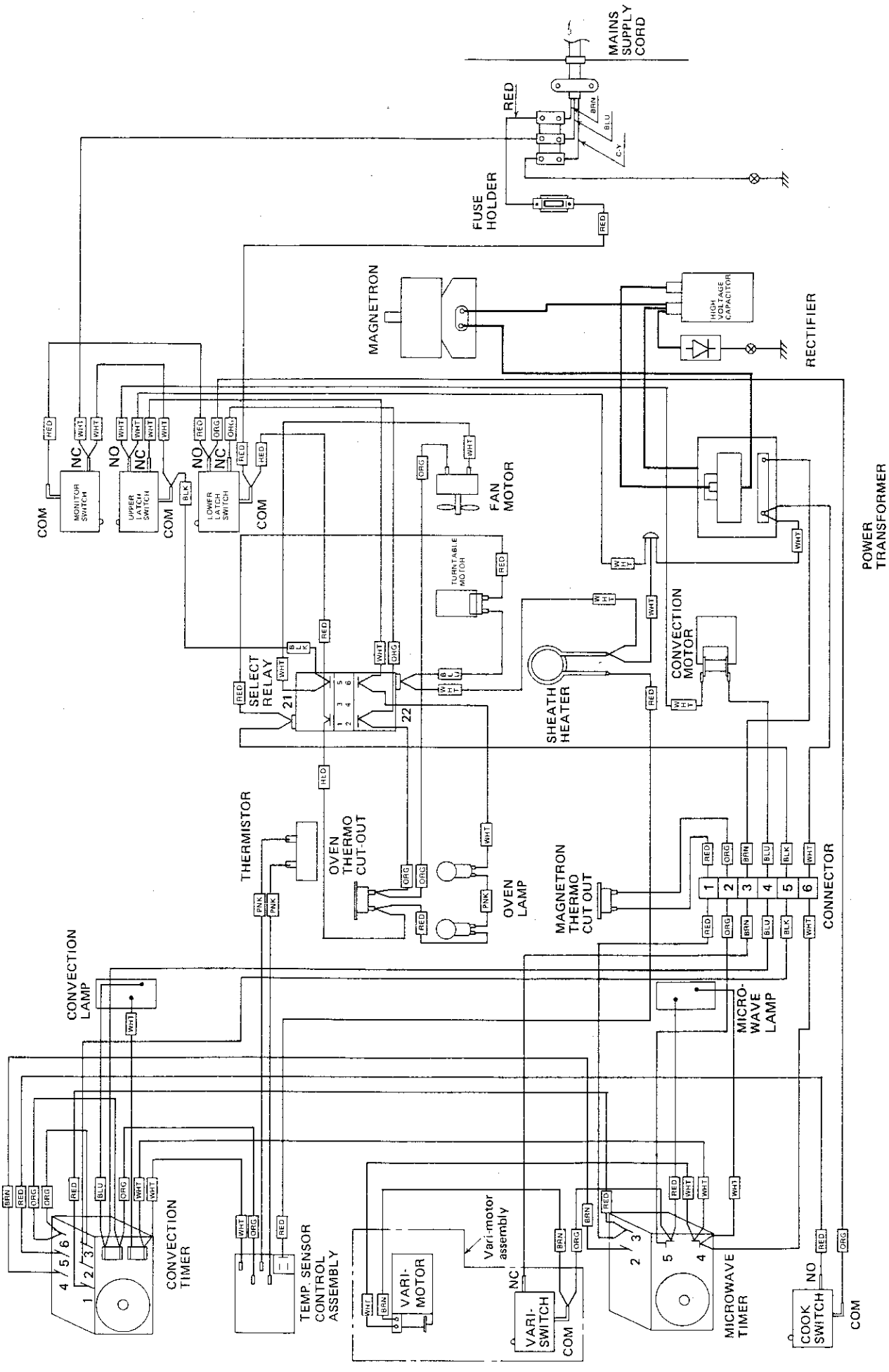


Figure 22. Pictorial Diagram (Australia Model)

CIRCUIT SUBJECT TO CHANGE
WITHOUT NOTICE
DOOR CLOSED
COOK OFF CONDITION

WIRE COLOUR CODE SYMBOL

RED	: RED	WHT	: WHITE
BRN	: BROWN	BLU	: BLUE
ORG	: ORANGE	BLK	: BLACK
PNK	: PINK		
G-Y	: GREEN AND YELLOW STRIPE		
HV	: HIGH VOLTAGE WIRE		
/18	: SECTIONAL AREA OF	0.8 mm²	
	: NO INDICATION SHOWS	0.3 mm²	
○	: QUICK CONNECT TERMINAL		
●	: SOLDER OR CLINCH TERMINAL		
▫	: CONNECTOR		

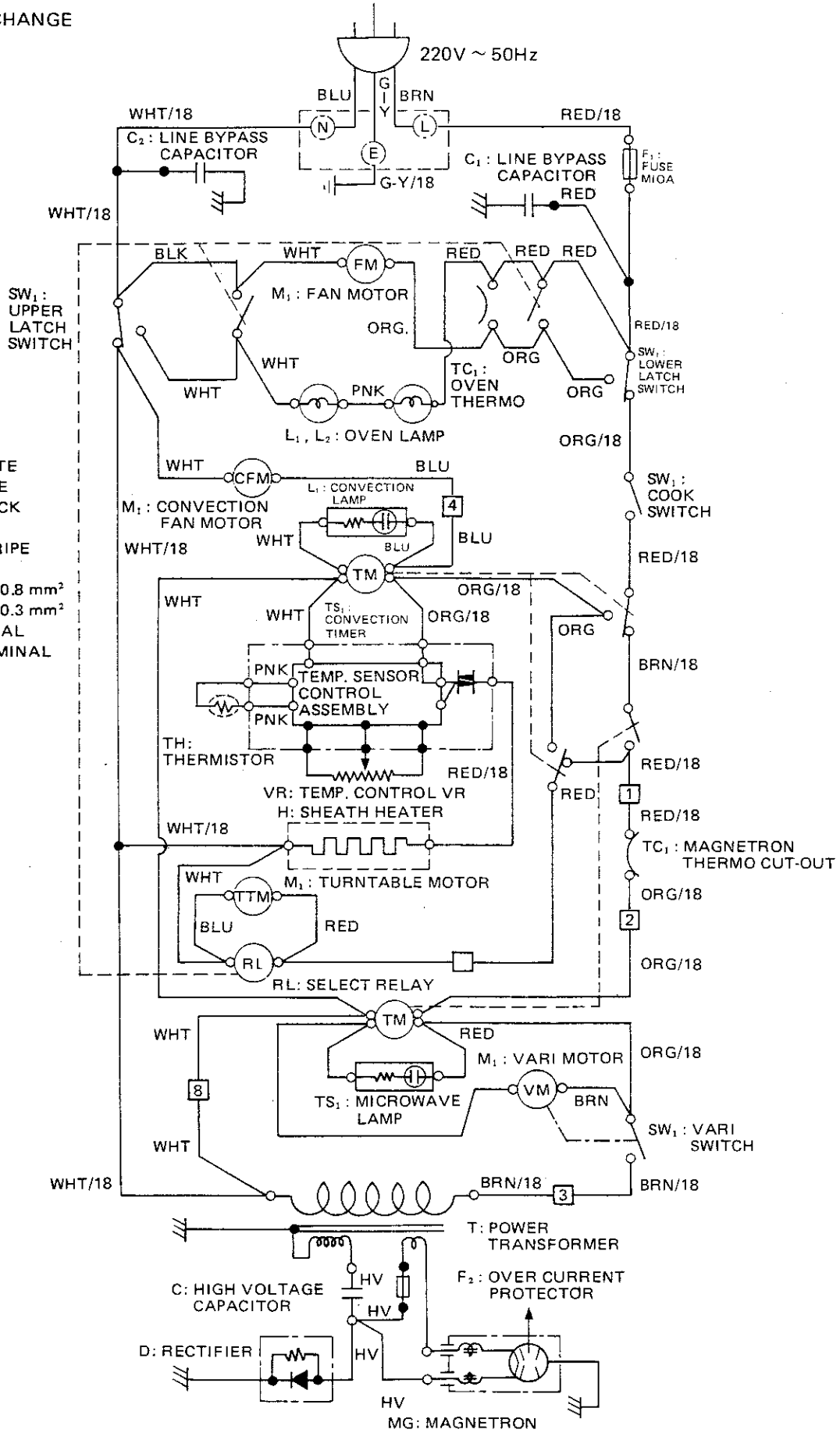


Figure 21. Schematic Diagram (South Africa)

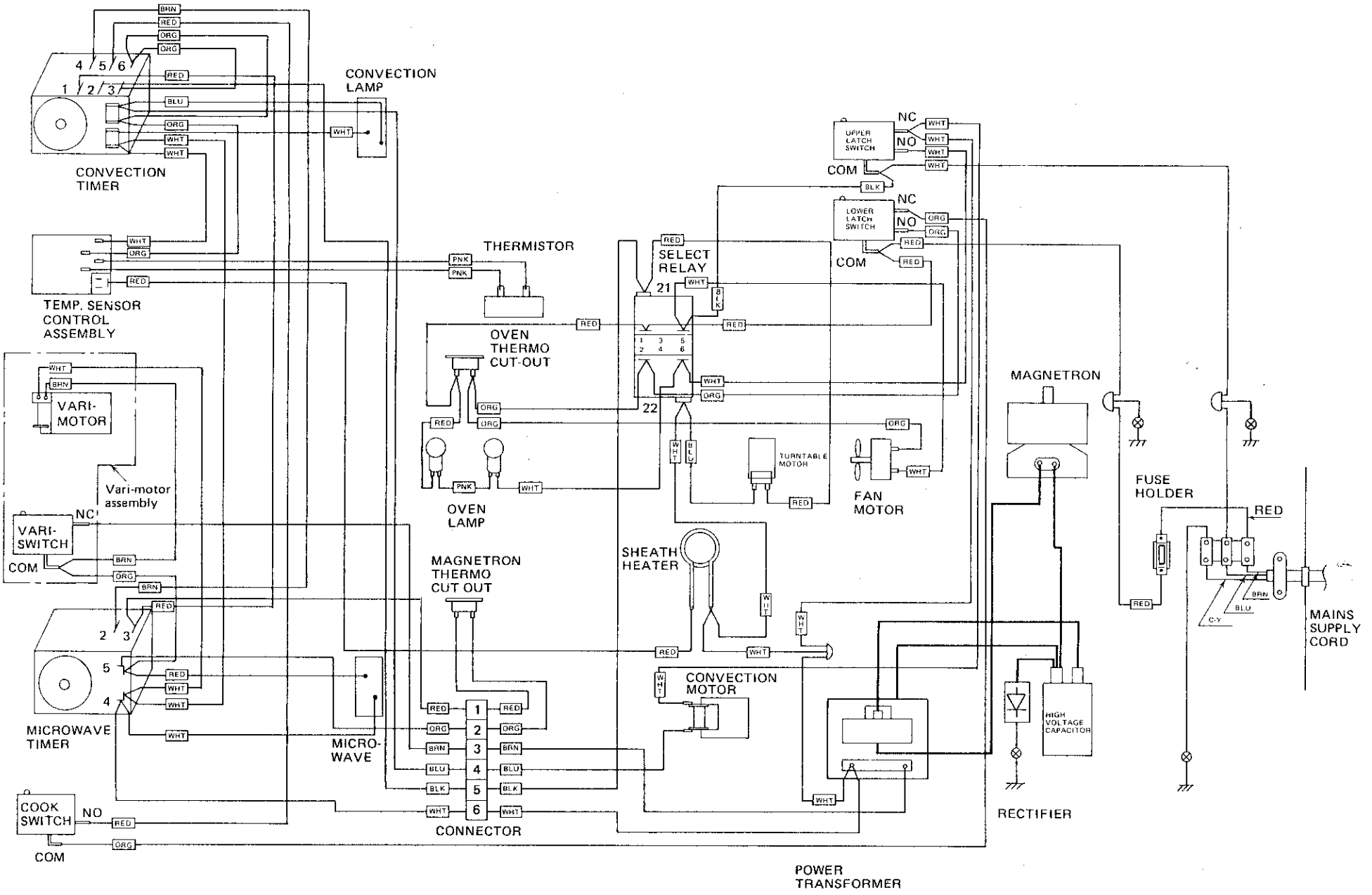
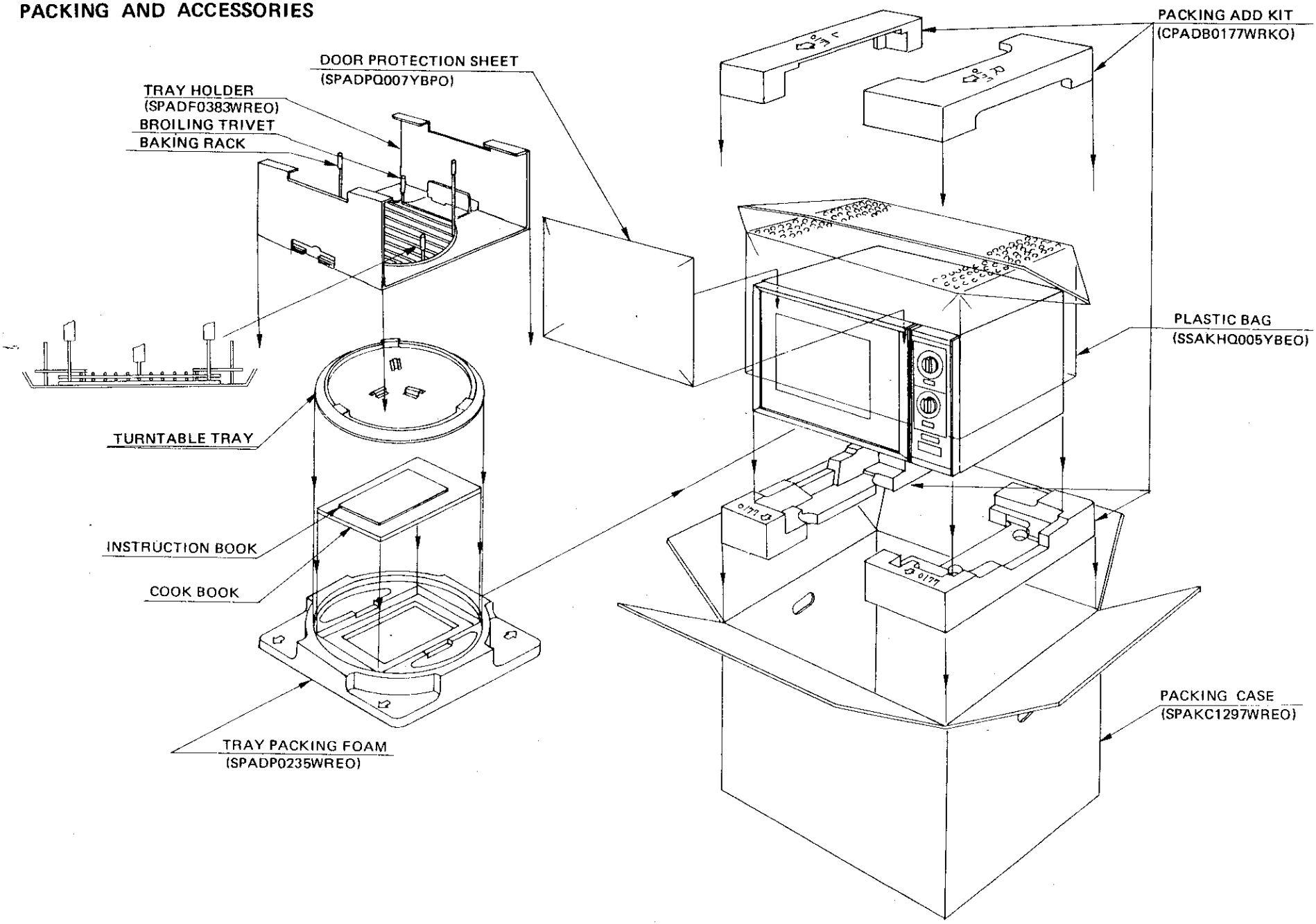


Figure 23. Pictorial Diagram (South Africa)

PACKING AND ACCESSORIES



PARTS LIST

REF. NO.	PART NO.	DESCRIPTION	Q'TY	CODE
		ELECTRICAL PARTS		
1- 1	FV-MZ0108WRK0	Magnetron assembly	1	BP
1- 2	RTHM-0026WRE0	Magnetron thermo cut-out	1	AS
1- 3	RTRN-0173WRE0	Power transformer (Australia)	1	BS
	RTRN-0172WRE0	Power transformer (South Africa)	1	BS
1- 4	RC-QZ0045WRE0	High voltage capacitor	1	BA
1- 5	RH-DZ0046WRE0	Rectifier	1	AS
1- 6	RMOTE0081YBE0	Turntable motor	1	BB
1- 7	RMOTE0106WRE0	Fan motor	1	AW
1- 8	RMOTE0116WRE0	Convection motor	1	AX
1- 9	QSWTE0139WRE0	Microwave timer	1	AZ
1-10	QSWTE0138WRE0	Convection timer	1	BA
1-11	QSWTE0120WRE0	Vari-motor assembly	1	AZ
1-12	QSW-M0088WRE0	Cook switch	1	AH
1-13	QSW-M0096WRE0	Lower latch switch	1	AH
1-14	QSW-M0096WRE0	Upper latch switch	1	AH
1-15	QSW-M0100WRE0	Monitor switch (Australia only)	1	AH
1-16	QFS-CQ001YBE0	Fuse	1	AE
1-17	QFSHDQ001YBE0	Fuse holder	1	AH
1-18	RLMPE0102WRE0	Microwave lamp	1	AH
1-19	RLMPE0085WRE0	Convection lamp	1	AG
1-20	RLMPT0021WRE0	Oven lamp	2	AF
1-21	QSOCL0055WRE0	Oven lamp socket	2	AH
1-22	QACCA0018WRE0	Mains supply cord (Australia)	1	AS
	FACC-0019WRK0	Mains supply cord (South Africa)	1	AX
1-23	FPWBF0065WRE0	Temp. control unit (Australia)	1	BL
	FPWBF0065WRE0	Temp. control unit (South Africa)	1	BL
1-24	RRLY-0104WRE0	Select relay (Australia)	1	AY
	RRLY-0103WRE0	Select relay (South Africa)	1	AY
1-25	RHET-0045WRE0	Sheath heater (240V)	1	BA
	RHET-0044WRE0	Sheath heater (220V)	1	BA
1-26	RTHM-0034WRE0	Oven thermo cut-out	1	AH
1-27	FH-HZ0017WRK0	Thermistor	1	AS
1-28	RC-KZ0017WRE0	Line bypass capacitor (South Africa Only)	2	AH
1-29	QTANN0013YBE0	Cord connector	1	AH
		CABINET PARTS		
2- 1	FDAI-0187WRY0	Base cabinet (A)	1	AQ
2- 2	FDAI-0186WRY0	Base cabinet (B)	1	AV
2- 3	GLEGP0009YBE0	Foot	4	AB
2- 4	GOVNR0060WRTA	Back cabinet	1	AW
2- 5	LBSHC0032WRE0	Cord bushing	1	AB
2- 6	LHLDK0005YBFA	Cord holder	1	AB
2- 7	GCABU0082WRTA	Outer case cabinet	1	BC
2- 7A	PCUSU0312WRP0	Shading cushion	2	AA
2- 7B	PPACU0002YBP0	Oven lamp cushion (A)	1	AA
2- 7C	PFILW0035WRP0	Insulator	1	AC
2- 8	LANGQ0255WRW0	Capacitor mounting bracket	1	AC
2- 9	PCOVP0067YBZ0	Edge cover	1	AB
2-10	LBNDK0035WRP0	Capacitor holder	1	AB

REF. NO.	PART NO.	DESCRIPTION	Q'TY	CODE
2-11	PSPAGQ002YBE0	Vibration proof cushion	2	AA
2-12	FCAMF0018WRY0	Door swing stop lever	1	AF
2-13	LANGF0267WRP0	Door angle	1	AD
2-14	MSPRT0081WRE0	Door spring (A)	1	AB
2-15	MSPRT0082WRE0	Door spring (B)	1	AB
2-16	PSPA-0093WRF0	Door lever spacer (A)	1	AB
2-17	PSPA-0090WRF0	Door lever spacer (B)	1	AB
2-18	LANGQ0225WRW0	Cord mounting bracket	1	AC
2-19	LSTPP0009YBF0	Cord anchorage (lower)	1	AC
2-20	LSTPP0008YBF0	Cord anchorage (upper)	1	AC
2-21	PCAS-0017WRFA	Plug case	1	AD
2-22	FFTAS0019WRY0	Oven lamp access cover	1	AF
2-23	PPACU0001YBP0	Oven lamp cushion (B)	1	AB
2-24	PCUSG0215WRP0	Base cabinet cushion	1	AA
2-25	PTUBU0018WRE0	Line bypass capacitor protection tube (South Africa Only)	2	AB
2-26	QLUGEQ002YBE0	Line bypass capacitor lug terminal (South Africa only)	1	AB

CONTROL PANEL PARTS

3- 1	FPNLC0336WRY0	Control panel frame assembly	1	AZ
3- 1A	HDECA0482WREA	Panel plate	1	AR
3- 1B	HDECQ0097WRRA	Temp. panel plate	1	AN
3- 1C	HDECQ0098WRRA	Timer panel plate	1	AN
3- 1D	GCOVA0051YBP0	Select cover	2	AA
3- 2	FCHSM0079WRW0	Control panel back plate	1	AK
3- 3	MLEVF0123WRE0	Open device	1	AT
3- 4	JBTN-0071WRVC	Open button	1	AD
3- 5	JBTN-0095WRMA	Cook button	1	AF
3- 6	JKNBK0131WRVA	Mode select knob	1	AE
3- 7	JKNBK0106WRVA	Temp. control knob	1	AE
3- 8	FKNBK0019YBK0	Timer knob assembly	2	AF
3- 9	FDALM0004WRY0	C-timer scale plate	1	AH
3-10	LANGF0268WRWD	C-timer mounting support plate	1	AA
3-11	LANGQ0258WRW0	C-timer mounting plate	1	AD
3-12	MCAMP0025WRF0	C-timer cam (A)	1	AD
3-13	MCAMP0030WRF0	C-timer cam (B)	1	AC
3-14	MLEVP0049WRF0	C-timer lever (A)	1	AD
3-15	MLEVP0050WRF0	C-timer lever (B)	1	AC
3-16	FDALM0007WRY0	M-timer scale plate	1	AH
3-17	LANGQ0296WRW0	M-timer mounting plate	1	AC
3-18	LSUB-0141WRW0	Cook lamp mounting plate	2	AD
3-19	PZETE0065WRP0	Cook lamp insulator	2	AD
3-20	PZETE0056WRP0	Cook switch insulator	1	AA

OVEN PARTS

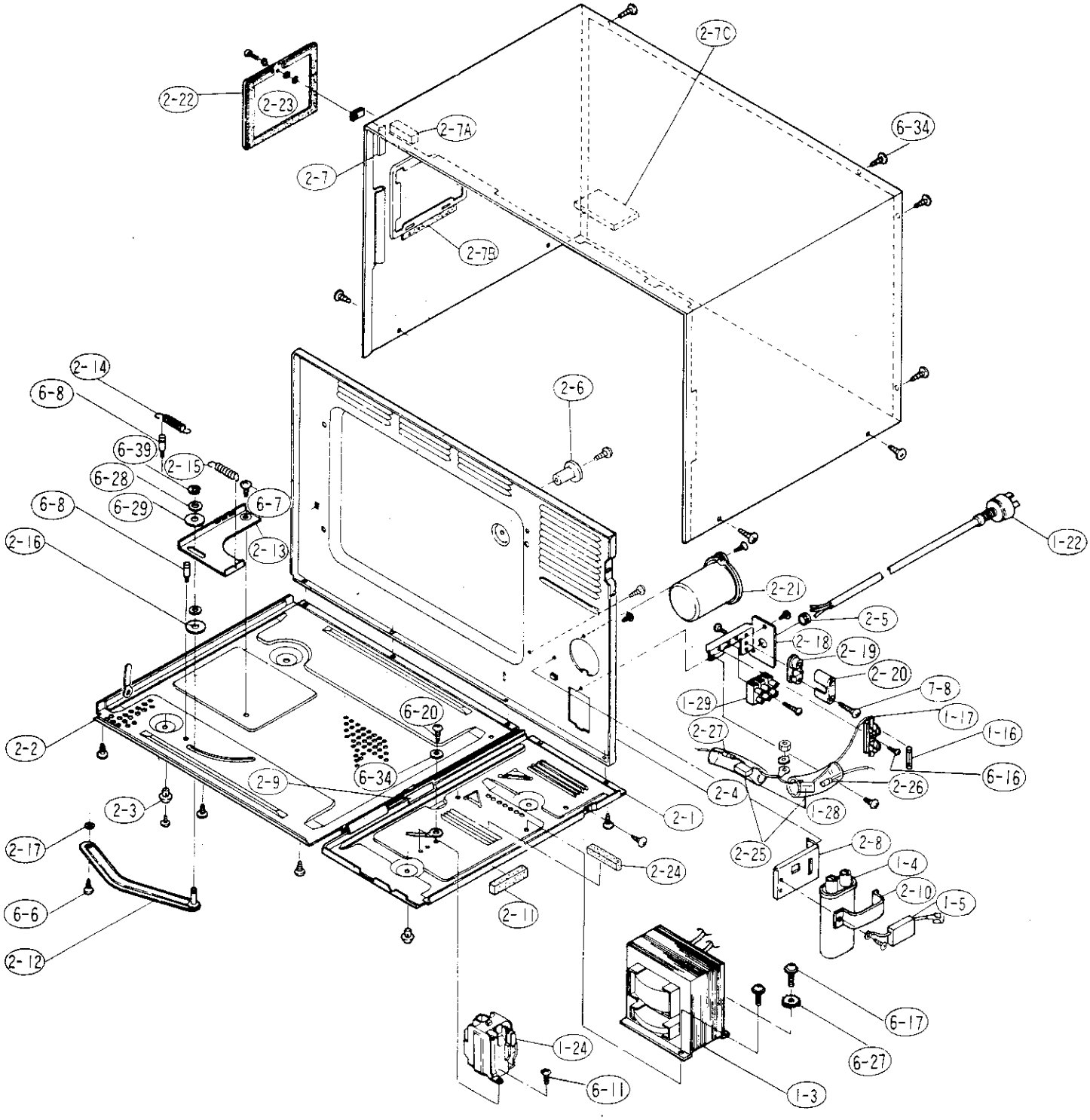
4- 1	FOVN-0168WRL0	Oven cavity	1	BU
4- 2	FROLM0001YBY0	Turntable roller assembly	3	AG
4- 3	FCPL-0024WRK0	Turntable coupling assembly	1	AV
4- 4	FTNT-0019WRHA	Turntable tray	1	AW
4- 5	PSPAG0021WRF0	Motor spacer	1	AB
4- 6	PCOVP0236WRE0	Waveguide cover	1	AH
4- 7	PGLSP0015YBE0	Oven lamp screen glass	1	AF
4- 8	LANGQ0223WRW0	Oven lamp mounting plate	1	AE

REF. NO.	PART NO.	DESCRIPTION	Q'TY	CODE
4- 9	PDUC-0300WRF0	Magnetron cooling duct (A)	1	AG
4-10	PDUC-0292WRF0	Magnetron cooling duct (B)	1	AK
4-11	LANGQ0186WRW0	Turntable motor mounting plate	1	AD
4-12	FFANJ0017WRK0	Fan blade assembly	1	AE
4-12A	MSPRP0038YBE0	Fan retainer clip	1	AB
4-13	LANGK0140WRW0	Hinge mounting plate	1	AC
4-14	LANGF0224WRP0	Chassis support	1	AE
4-15	LANGK0141WRF0	Upper latch hook	1	AF
4-16	MLEVF0124WRE0	Actuator (Australia only)	1	AF
4-17	LANGK0142WRF0	Lower latch hook	1	AC
4-18	PCUSG0218WRP0	Air guide cushion	1	AD
4-19	PDUC-0293WRW0	Steam duct (A)	1	AD
4-20	PDUC-0294WRW0	Steam duct (B)	1	AD
4-21	PDUC-0295WRW0	Steam duct (C)	1	AG
4-22	PDUC-0296WRW0	Steam duct (D)	1	AE
4-23	PDUC-0297WRW0	Steam duct (E)	1	AE
4-24	PGIDH0018WRW0	Air guide duct (A)	1	AD
4-25	PGIDH0019WRW0	Air guide duct (B)	1	AB
4-26	FREFH0022WRP0	Thermal protection plate (A)	1	AH
4-27	PREFH0023WRP0	Thermal protection plate (B)	1	AH
4-28	PREFH0018WRY0	Thermal protection plate (C)	1	AL
4-29	PREFH0025WRY0	Thermal protection plate (D)	1	AL
4-30	PREFH0026WRP0	Thermal protection plate (E)	1	AG
4-31	FREFH0027WRP0	Thermal protection cover	1	AF
4-32	PFPF-0034WRE0	Thermal protection sheet (A)	1	AM
4-33	PFPF-0035WRE0	Thermal protection sheet (B)	1	AM
4-34	PFPF-0036WRE0	Thermal protection sheet (C)	1	AH
4-35	PFPF-0037WRE0	Thermal protection sheet (D)	1	AQ
4-36	PDUC-0343WRW0	Convection air guide (A)	1	AN
4-37	PDUC-0299WRW0	Convection air guide (B)	1	AK
4-38	FSKR-0004WRW0	Convection air guide (C)	1	AG
4-39	PGIDH0022WRW0	Convection air guide (D)	1	AC
4-40	NPLYB0030WRF0	Pulley (A)	1	AC
4-41	FBRGM0017WRE0	Fan shaft	1	AU
4-42	LFIX-0082WRW0	Shaft mounting plate (A)	1	AC
4-43	LANGT0253WRW0	Shaft mounting plate (B)	1	AB
4-44	PGISH0038WRE0	Heating element insulator (A)	2	AL
4-45	FFTA-0001WRW0	Damper	1	AF
4-46	FANGK0121WRW0	Damper angle	1	AG
4-47	MSPRD0048WRE0	Damper spring	1	AA
4-48	NSFTT0058WRM0	Damper shaft	1	AA
4-49	PPACG0099WRF0	Damper cushion	1	AK
4-50	FROD-0018WRY0	Damper control lever assembly	1	AD
4-51	LANGQ0260WRE0	Convection motor mounting plate	1	AK
4-52	LPLYB0031WRF0	Pulley (B)	1	AC
4-53	NBLTK0001WRE0	Convection fan belt	1	AK
4-54	PCUSU0406WRP0	Steam duct cushion (B)	1	AA
4-55	PCUSU0381WRP0	Steam duct cushion (C)	1	AA
4-56	PCUSU0337WRP0	Shading cushion	1	AA
4-57	FFANM0019WRYD	Convection fan	1	AL
4-58	PGISH0041WRE0	Heating element insulator	1	AF
4-59	PFPF-0048WRP0	Thermal protection sheet (E)	1	AN

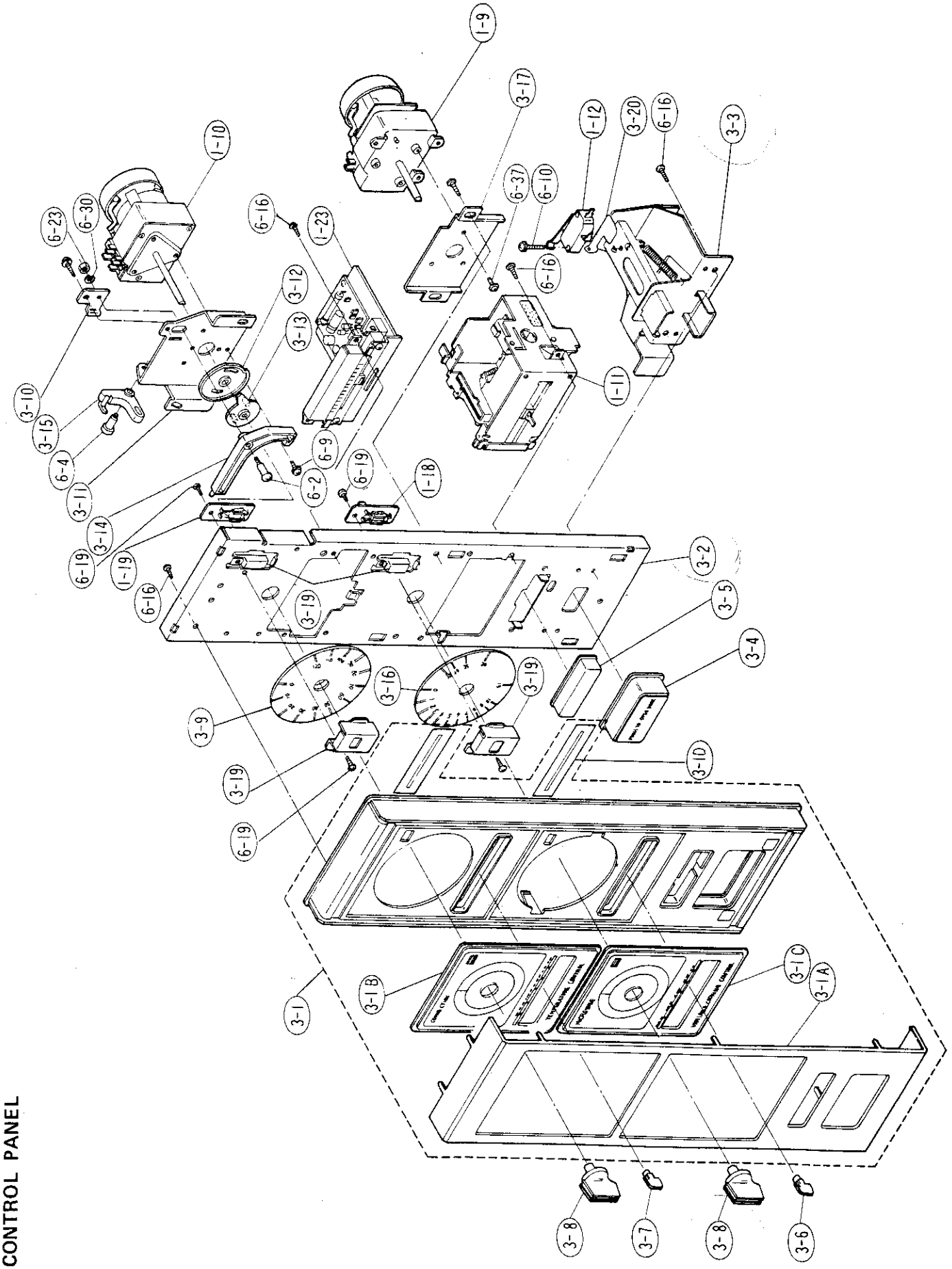
REF. NO.	PART NO.	DESCRIPTION	Q'TY	CODE
		DOOR PARTS		
*	DDORF0254WRKO	Door assembly	1	BW
		MISCELLANEOUS		
5- 1	QW-HZ0059WRE0	High voltage wire A (Trans.-Capa.)	1	AD
5- 2	QW-HZ0060WRE0	High voltage wire B (Mag.- Capa.)	1	AE
5- 3	FW-VZ0463WRE0	Main wire harness (Australia)	1	AY
	FW-VZ0464WRE0	Main wire harness (South Africa)	1	AY
5- 4	FW-VZ0465WRE0	Panel wire harness	1	AW
5- 5	FW-VZ0391WRE0	Thermistor harness	1	AH
5- 6	QW-VZ0647WRE0	Earth wire	1	AB
5- 7	FAMI-0024WRE0	Broiling trivet	1	AS
5- 8	FAMI-0023WRE0	Baking rock	1	AS
5- 9	TCADC0131WRR0	Cook book (Australia)	1	BA
	TCADC0141WRR0	Cook book (South Africa)	1	BA
5-10	TINSE0215WRR0	Instruction book (Use & Care)	1	AM
5-11	LHLDWQ003YBE0	Wire holder, Type (M)	1	AA
5-12	LHLDWQ004YBE0	Wire holder, Type (L)	1	AA
		SCREWS, NUTS, WASHERS, RINGS AND PIN		
6- 1	LX-BZ0105YBE0	Screw; waveguide cover mtg	6	AA
6- 2	LX-BZ0127WRE0	Screw; C-timer lever (A) mtg	1	AA
6- 3	LX-BZ0141WRE0	Screw; actuator mtg (Australia)	1	AA
6- 4	LX-BZ0170WRE0	Screw; C-timer lever (B) mtg	1	AA
6- 5	LX-CZ0017WRE0	Screw; heating element mtg plate, convection air guide (C) and turntable roller mtg	8	AA
6- 6	LX-CZ0029WRE0	Screw; door lever mtg	1	AA
6- 7	LX-CZ0030WRE0	Screw; door angle mtg	1	AA
~~6- 8~~	~~LX-CZ0031WRE0~~	~~Screw; door spring and stopping screw mtg~~	~~2~~	~~AA~~
6- 9	XBPSD30P06K00	Screw; C-timer mtg	3	AA
6-10	XBPSD30P15K00	Screw; cook switch mtg	1	AA
6-11	XCPSD40P09000	Screw; select relay mtg	1	AA
6-12	XFPSD30P06000	Screw; thermo cut out mtg	2	AA
6-13	XBPSD40P25000	Screw; fan motor and convection motor mtg	4	AA
6-14	XBTUW40P08000	Screw; heating element, oven light socket mounting plate, T.T. motor, convection air guide (B) and damper angle, shaft mounting plate mtg	15	AA
6-15	XBTSD40P10000	Screw; damper mtg	1	AA
6-16	XCPSD40P10000	Screw; fuse holder, control panel frame assembly, temp. control unit, open device assembly mtg	13	AA
6-17	XBPSD60P14KS0	Screw; power transformer mtg	2	AA
6-18	XBTUF40P08000	Screw; convection air guide (A) mtg	6	AA
6-19	XCPSD30P06000	Screw; convection and micro cook lamp, cook lamp mounting plate, oven thermo cutout mtg	6	AA
6-20	XBSSD40P12000	Screw; door assembly mtg	4	AA

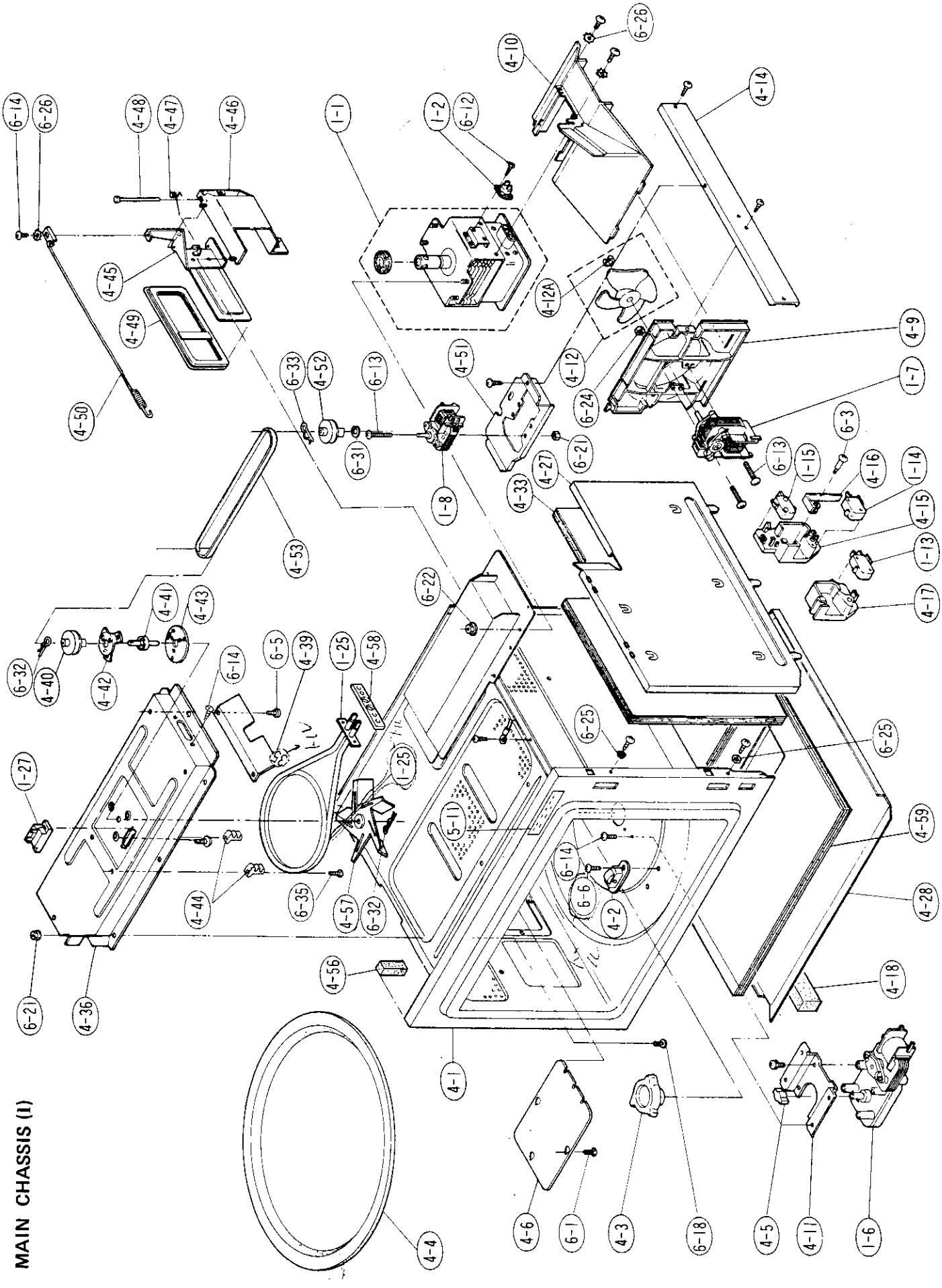
REF. NO.	PART NO.	DESCRIPTION	Q'TY	CODE
6-21	LX-NZ0029YBE0	Nut; convection air guide (A), damper and convection motor mounting plate mtg	10	AA
6-22	LX-NZ0048WRE0	Nut; magnetron mtg	4	AA
6-23	XNESD30-24000	Nut; c-timer lever (A) mtg	1	AA
6-24	XNESD40-32000	Nut; fan motor mtg	2	AA
6-25	LX-WZ0035WRE0	Washer (outer tooth); upper and lower latch hook mtg	2	AA
6-26	XWVSD40-05000	Washer (outer tooth); damper control lever, cooling duct (B) mtg	3	AA
6-27	XWWSD60-08000	Washer; power transformer mtg	1	AA
6-28	XWHSD50-08000	Washer; door swing stop lever	1	AA
6-29	XWHSD80-12000	Washer; door swing stop lever	1	AA
6-30	XWSSD30-07000	Washer; c-timer lever (A) mtg	1	AA
6-31	XRESE40-06000	Ring; convection motor	1	AA
6-32	XPNUW80---000	Pin; convection fan and pulley (A) mtg	2	AA
6-33	XPNSD80---000	Pin; pulley (B) mtg	1	AA
6-34	XCTSB40P12000	Screw; outer case cabinet mtg	10	AA
6-35	XBPUW30P10000	Screw; heating element insulator (A) mtg	2	AA
6-36	XCPSD30P08000	Screw; oven lamp socket mtg	4	AA
6-37	XCPSD30P08X00	Screw; micro timer mtg	3	AA
6-38	XBTUW40P10000	Screw; heating element mtg	2	AA
6-39	XRES040-06000	Ring ; door swing stop lever	1	AA

BASE & OUTER CASE

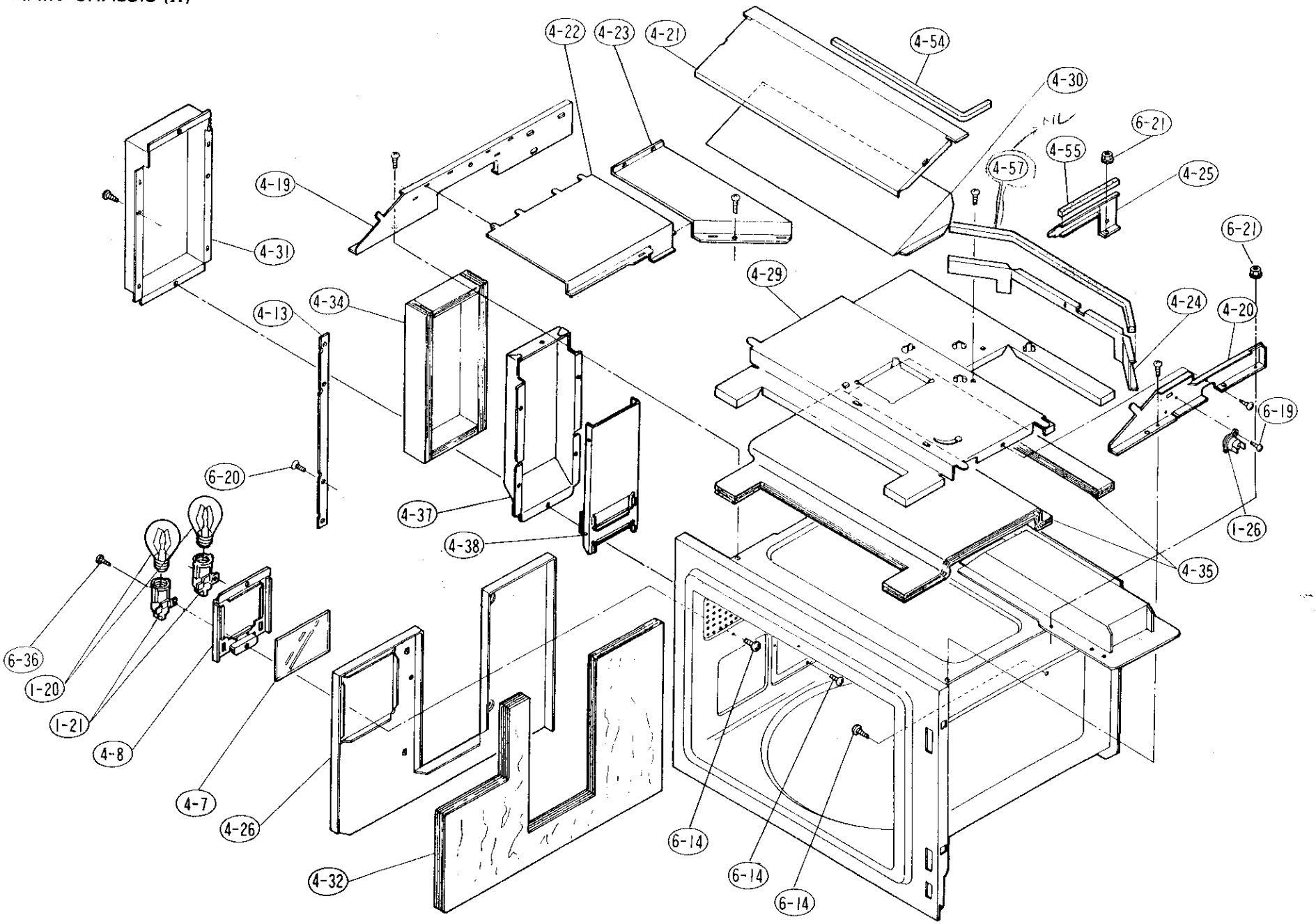


CONTROL PANEL

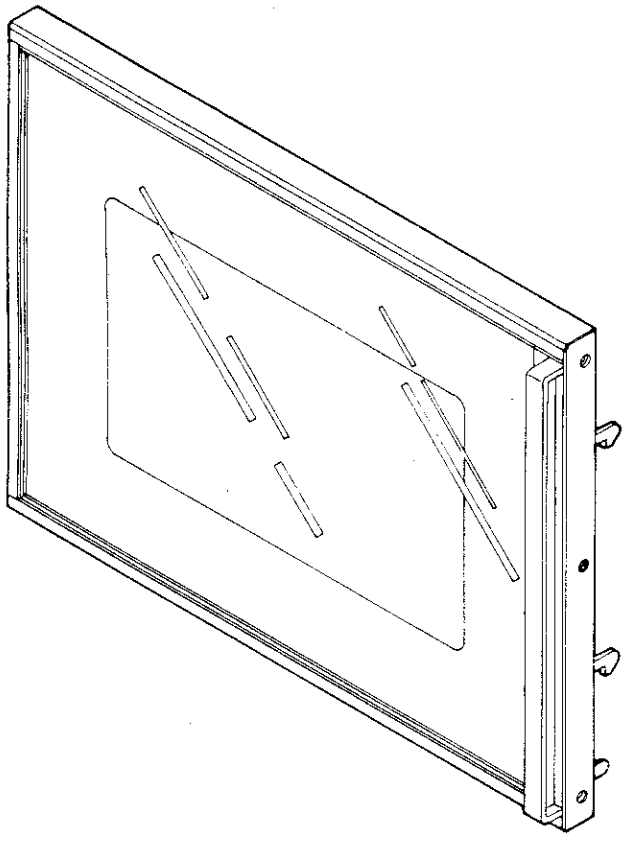



MAIN CHASSIS (I)

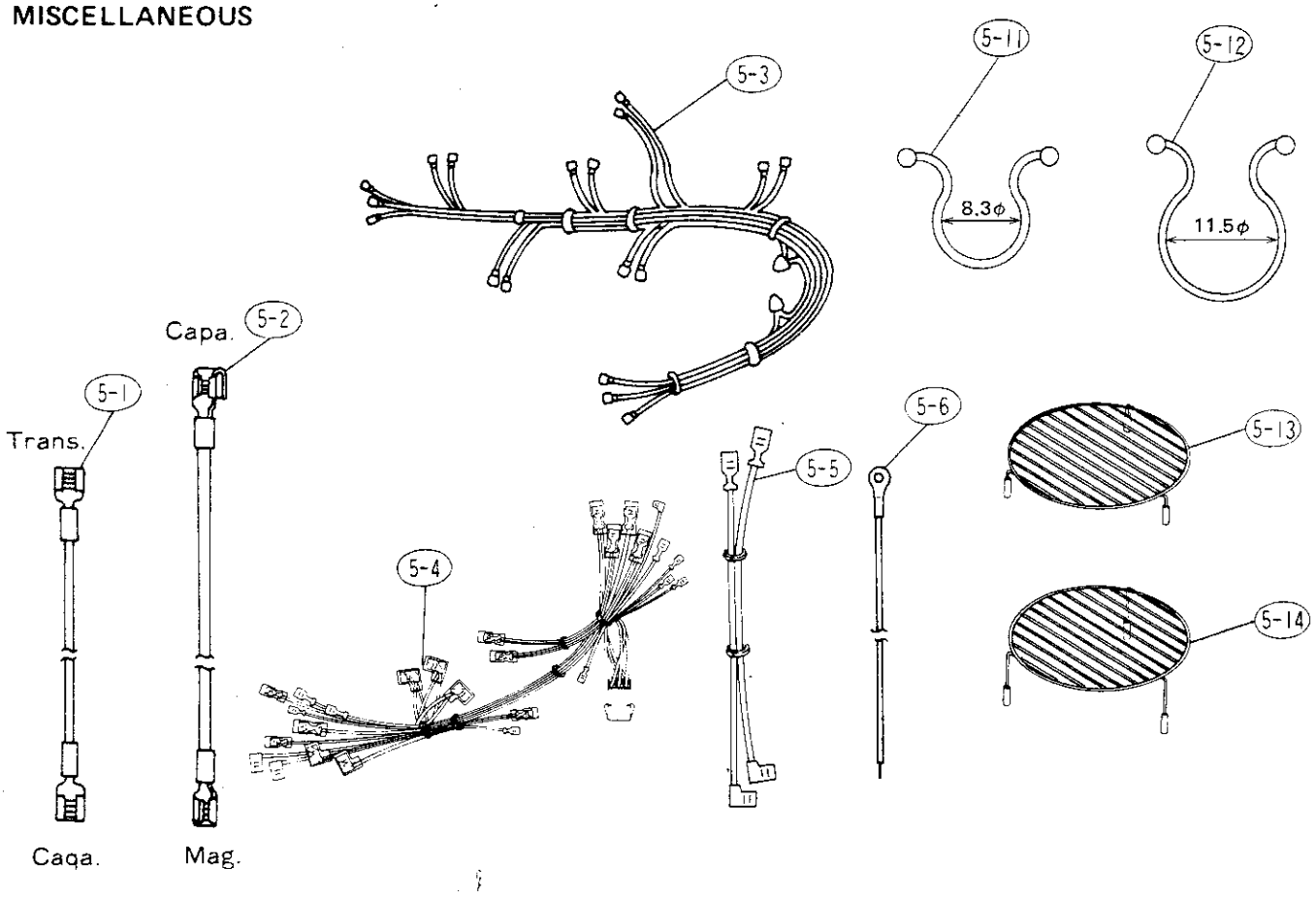
MAIN CHASSIS (II)



DOOR ASSEMBLY



MISCELLANEOUS



FIXING PROCEDURE OF CORD ANCHORAGE

General:

As for the above subject, sometime it may cause to have wrong fixing about two pieces of cord anchorage unit. But this cord anchorage is an important part for the safety, therefore it must be fixed correctly and firmly.

Content:

1. The cord anchorage which is used to secure the mains supply cord can be fixed in two different ways.
2. If you fix them as shown in Figure 2, the mains supply cord will not be secured firmly.
3. Therefore, make sure to fix them as shown in figure 1.

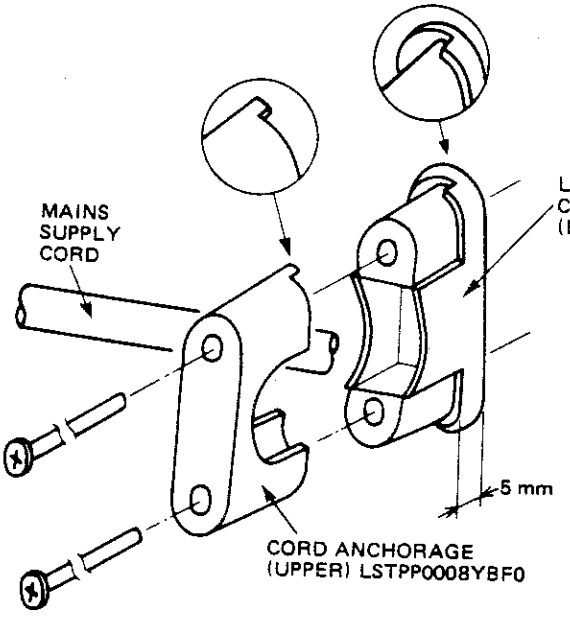


Figure 1. Correct Fixing

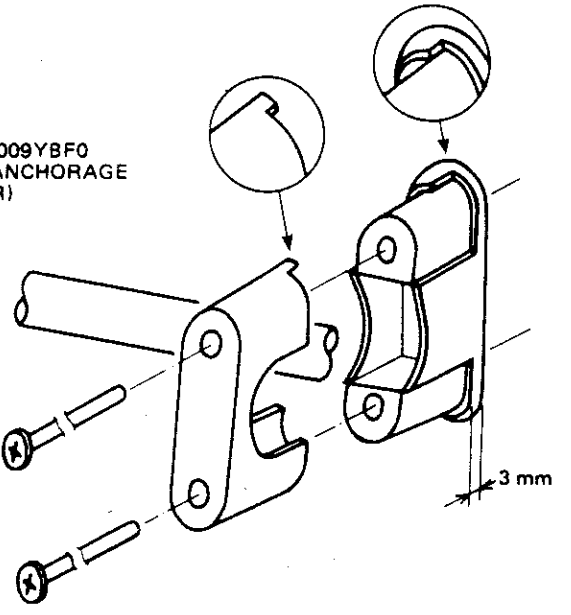


Figure 2. Wrong Fixing